MAR 1 3 1928

PAPER TRADE JOURNAL

Vol. LXXXVI, No. 10 MARCH 8, 1928 Per copy 10 Cents Per annum $4.00

IVORY

PRIME BLEACHED

HERKULES EXTRA

STRONG UNBLEACHED

Samson Extra Strong Bleached
D. V. Prime Bleached
T-I Prime Bleached
T-II Second Quality Bleached

Herkules Strong Unbleached
Osen Prime Unbleached (soft)
Ragnit Easy Bleaching
Tilsit Easy Bleaching

UNBLEACHED AVAILABLE FOR IMMEDIATE SHIPMENT

SHIPMENTS THROUGHOUT THE ENTIRE YEAR

ZELLSTOFFFABRIK WALDHOF

MANNHEIM-WALDHOF
GERMANY

Producing 800 tons daily at

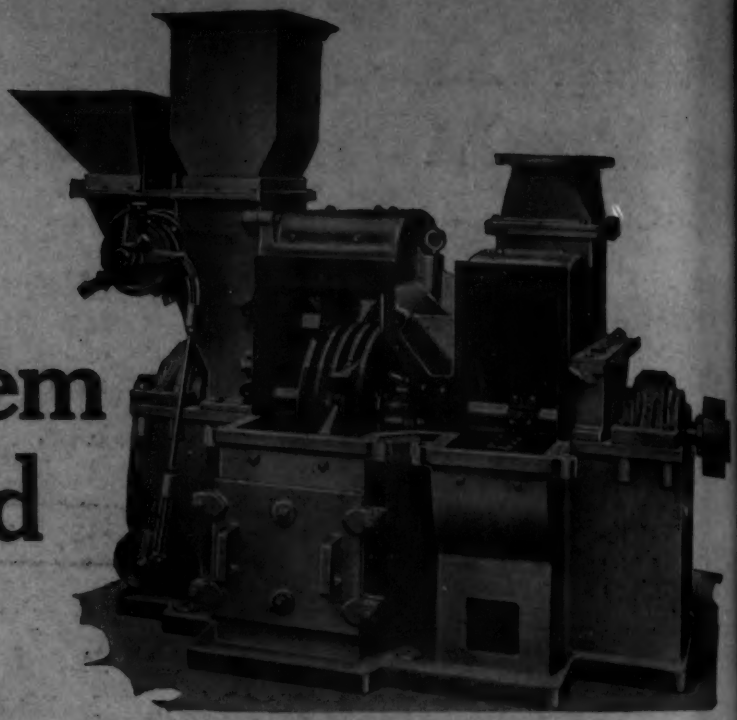
MANNHEIM TILSIT RAGNIT KELHEIM

Sole Agents for the U. S. A.

Castle & Overton, Inc.

200 FIFTH AVE., NEW YORK CITY

Lopulco Unit System Pulverized Fuel



Lopulco Unit Mill with cover plate removed, showing ease of access to operating parts.

A Pulverized Fuel *System*, to be successful must be exactly what the term implies—

an orderly combination and arrangement of component parts functioning as a complete unit.

A good mill, although an important detail, is not sufficient, pulverization is only the first step in pulverized coal firing. Burner design is important. Furnace design is important. But, the factor *most* essential to successful pulverized fuel burning is the correct grouping of all the individual elements, into one complete, properly balanced, application.

The wealth of experience incident to the design and application of Lopulco Storage Systems to hundreds of boilers forms an excellent background for the Lopulco Unit System of direct firing.

Combustion Engineering Corporation

International Combustion Building — 200 Madison Ave., New York

A SUBSIDIARY OF INTERNATIONAL COMBUSTION ENGINEERING CORPORATION

Entered as second class matter March 14, 1925, at the Post Office at East Stroudsburg, Pa., under Act of Congress of March 3, 1879. ■ ESTABLISHED 1874 ■ FIFTY - THIRD YEAR ■ Published monthly by the Lockwood Trade Journal Company at 34 North Crystal St., East Stroudsburg, Pa.
EXECUTIVE AND EDITORIAL OFFICES: 10 East 39th STREET, NEW YORK CITY

TRADE MARK
CAMACHINE ROLL-WINDERS

Better Rolls—
Greater Production—
Trouble-Free Service—

A thoroughly efficient machine capable of slitting wide materials into a number of narrower widths or many narrow strips, is a valuable addition to modern factory equipment where rolls of paper or board of any kind are required in the manufacture of the articles there produced, or where material in roll form is produced for sale to others who utilize it.

May we tell you how CAMACHINES have kept pace with the needs of the paper industry, and how the right slitter and roll winder will save you money by speeding up production and cutting down waste? Just drop us a line.

CAMERON MACHINE COMPANY
61 POPLAR STREET BROOKLYN, NEW YORK

PAPER TRADE JOURNAL
ESTABLISHED 1872

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY AND THE PIONEER PUBLICATION IN ITS FIELD

FIFTY-SIXTH YEAR

Published Every Thursday by the
LOCKWOOD TRADE JOURNAL CO., Inc.

GEO. S. MACDONALD, President — F. K. HOPPIE, Secretary

Executive and Editorial Offices, 10 East 39th Street, New York
Chicago Office: Room 14, Suite 410, 123 West Madison St.

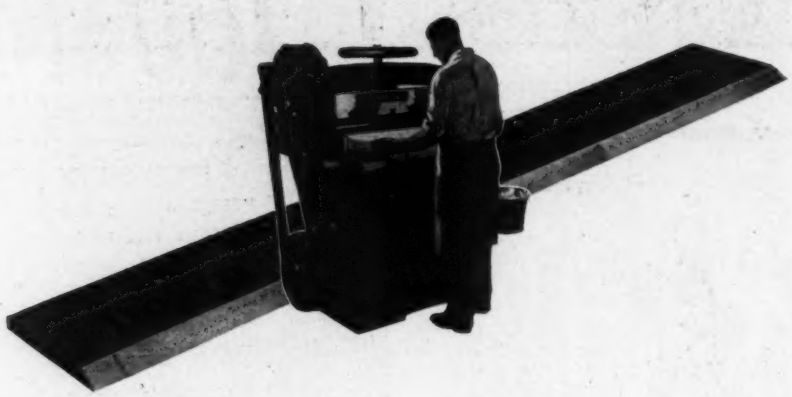
TABLE OF CONTENTS

Copyright, 1928, by Lockwood Trade Journal Co., Inc.

Paper Men Appear for Forestry Bills 23
Paper Business Expanding in Chicago 25
J. H. Vail Promoted to Western Post 25
Wisconsin Paper Mills Plan Improvements 26
Consolidated Changes Contemplated 26
Canadian News Print Mills Make Good Showing 28
Quick Work at Soo Paper Mill 28
Receivership for Clyde & Sissiboo Co. 28
New Edge Moor Cross Drum Boiler Catalog 28
Ontario Paper Mills Working Close to Capacity .. 30
Port Arthur Mills Anniversary 30
Paper Demand Improving in Philadelphia 32
Wholesale Waste Merchants to Dine 32
Special Session of Wrapping Paper Dealers 32
New Butchers Fiber for Bayless Co. 34
Richie-Howarth Co. Changes 34
Paper Mill On the Auction Block 34
Construction News 36
Power Plant Section 38
G. H. Thomas Goes With Container Corp. 46
New York Trade Jottings 48
Editorial 50
Merger Rumors on Pacific Coast 51
U. S. Envelope Co. Has Good Year 51
Paper Mill Workers Request Higher Wages 51
Parsons Paper Co. 75 Years Old 51
Paper Mill Worker Dies from Injuries 51
Technical Section
Wood Measurement 53
German Technical Meeting 62
Ralph A. Haywood Gets Patent 62
TAPPI Notes 62
Measuring Jordan Power Requirements 63
Cost Section 65
Obituary 68
Warren Mfg. Co. Installs Machine 68
Imports of Paper and Paper Stock 70
New York Market Review 74
Miscellaneous Markets 76
Market Quotations 78

THE PAPER TRADE JOURNAL is indexed in Industrial Arts Index

Want and For Sale Advertisements 85, 86, 87, 88



Another DOWD *feature*

The "Special A"--America's leading paper cutting knife--is made to manufacturer's specifications. No matter what type of cutting machine you use, the "Special A" will operate with complete accuracy and efficiency.

Specify this knife for your new or old cutting machine. It will save you money by more accurate cutting and trimming and longer service life.

Dowd makes a full line of paper mill knives, including roll bars, bed plates, chipper, barker and rag knives, etc. Also the Dowd Patented Cluster Filling. Send for complete details on any of this equipment.

R. J. DOWD KNIFE WORKS

Makers of Better Cutting Knives Since 1847

BELOIT, WISCONSIN

ESTABLISHED IN 1872

PAPER TRADE JOURNAL

With Which Is Combined

Vol. LXXXVI, No. 10 PAPER Thursday, March 8, 1928

Pulp and Paper Men Appear for Forestry Bills

Program in Support of the McSweeney-McNary and Browne Bills Is Carried Out at Washington Under the Direction of the National Forestry Committee of Which R. S. Kellogg, Secretary of the News Print Service Bureau Is Chairman—President Coolidge and General Lord, Director of the Budget, Are Likely To Aid

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., March 7, 1928.—Paper and pulp manufacturers, and representatives of forestry interests and lumbermen, were given an opportunity here last week to tell government officials what they thought of the McSweeney-McNary and the Browne bills. The week's program was carried out under the direction of the National Forestry Program Committee of which R. S. Kellogg, of the News Print Service Bureau, is chairman.

In addition to appearing before the Agricultural Committees of both the Senate and the House the representatives had a conference with President Coolidge, and General Lord, Director of the Budget. Both of the latter expressed interest in the McSweeney-McNary bill and apparently both will do everything possible to make the bill a law.

Among Those Who Testified

Among some of those here and testifying before the committees were included: George W. Sisson, Jr., president Racquette River Paper Company, Potsdam, N. Y.; W. R. Brown, president Brown Paper Company, Berlin, N. H.; Oliver M. Porter, secretary, and C. M. Baker, engineer, American Paper and Pulp Association; R. S. Kellogg, secretary, and W. C. MacNaughton, engineer, News Print Service Bureau; Warren B. Bullock, Import Paper Committee; Julian Rothery, International Paper Company; C. P. Winslow, director Forest Products Laboratory, Madison, Wis.; W. E. B. Baker, Continental Paper and Bag Mills Corporation; George D. Bearce, International Paper Company; W. J. Damtoft, Champion Fibre Company, Canton, N. C.; John F. Preston, Hammermill Paper Company; Col. W. B. Greeley, Formerly Chief Forester of the United States; Joseph I. Pratt, secretary Southern Forest Congress; Elbert H. Baker, representing the American Newspaper Publishers Association; Samuel A. Dana, Dean of the University of Michigan Forestry School, and representing the Society of American Foresters; and many others.

Expect Bill to Become Law

Those who have been in closest touch with the situation are of the opinion that the McSweeney-McNary bill will be enacted into law. It is believed that the Browne bill which would provide $75,000 for the Forest Service "to discover economically practical methods of the disposal of waste materials of pulp and paper mills without polluting streams," will probably be incorporated in the McSweeney bill in some way or other.

The McSweeney bill, as is well known to the paper trade, authorizes reforestation and wood utilization research work and is very broad in its scope. A resolution adopted by the American Forestry Association in favor of enactment of the bill was submitted to the committee by Shirley W. Allen, representing the association.

The benefits to be expected from a proper conservation and efficient utilization of the 470,000,000 acres of timber land in the United States were outlined to the committee by Dean Dana. Elbert H. Baker, of the *Cleveland Plain Dealer*, emphasized to the committee the importance to the newspapers of the country of a reforestation program which will insure a supply of proper paper pulp. A perpetual pulp supply, he said, is possible through conservation. "Proper conservation of the forests of the country would grant us a paper pulp supply in perpetuity, said Mr. Baker.

Mr. Brown of the Brown Paper Company told the committee that the pulp manufacturers are faced with the need of reforestation if the industry is to continue to meet the paper consumption needs.

Need of Conservation

An urgent need of conserving and promoting the timber resources of the United States and its territories through enactment of the McSweeney bill was outlined for the committee by Colonel Greeley.

"When the industry is operating at the rate it will when properly developed," said Colonel Greeley, "Alaska will be supplying 1,000,000 tons of pulp a year. Proper research in the 46,000,000 to 50,000,000 acres of hardwood timber in the Southern States is also being prevented by a lack of funds."

Solidly Supported by Paper Industry

The paper industry of the United States is solidly back of the McSweeney bill Mr. Porter told the Senate Committee, and he continued:

The American Paper and Pulp Association represents the paper industry of the United States in its larger common problems, such as tariff protection, State and Federal legislation, vocational education, raw material supplies, etc.

The paper industry is a fundamental one,—seventh among the country's great national industries with an invested capital of over $1,500,000,000 and an annual production of approximately 15,000,000 tons of pulp and paper valued at well over $1,000,000,000.

The industry has more than 760 pulp and paper mills employing a quarter of a million wage earners whose wages total annually about $165,000,000.

The paper industry is a wood-using industry, dependent largely on the forests of the United States for its primary raw material—

pulpwood. It appreciates the necessity for legislation which will enable the forests of this country to be adequately protected and managed on the principle of sustained yield. It also appreciates the necessity for fundamental research in forestry as much as in chemistry and engineering production, distribution, etc.

Only those industries which do not have to meet the modern competition or which are not interested in profits are the ones which are not of necessity vitally interested in research, fundamental and applied. The paper industry of the United States is subject to intense competition both foreign and domestic. It, in common with many other domestic industries, has been enjoying a rather profitless prosperity, and it is vitally interested in research. The paper industry of the United States, through both its individual mills and the American Paper and Pulp Association, is solidly back of the legislation proposed in the McSweeney-McNary Forest Research Bill and urges its enactment into law, as it realizes that progress in forest protection, management, utilization, and replacement is dependent on research and it believes that the practical results of the research provided for in this bill will be of lasting value to all the wood-using industries of the United States.

Remarks by C. M. Baker

C. M. Baker, engineer of the American Paper and Pulp Association, appearing before the House Committee in connection with the Browne bill said:

I represent the American Paper & Pulp Association, an organization of the paper and pulp mills of the United States. Prior to taking up the work of this association on November 1st, 1927, I was for eight years State Sanitary Engineer of Wisconsin directing activities in the protection of public water supplies, sewage and waste disposal and the control of stream pollution. In this work a careful study was made of the relation between paper mill wastes and stream pollution. Prior to the work in Wisconsin I was for four years Assistant Engineer with the New York State Board of Health and for two years Sanitary Engineer with the United States Public Health Service.

In presenting this subject it seems desirable to first consider some of the fundamental principles involved in stream pollution.

The Effect of Wastes Upon Streams

The effect of organic pollution such as domestic sewage and wastes from various industries upon a stream, is to reduce the dissolved oxygen normally present and necessary to sustain fish life. This is brought about by a natural biological process of oxydation of the unstable organic compounds to stable nitrates, a process which requires oxygen. These nitrates constitute plant food and are assimilated by plant life, thus completing the cycle.

Waste causing pollution of streams may be divided into two general classes, suspended matter and organic wastes in solution.

The suspended matter tends to settle on the bed of the stream and form sludge deposits that may interfere with the spawn or spawning of fish. This waste may also carry with it organic pollution which in the process of decomposition forms gas that may result in large masses of scum and objectionable material rising to the surface. Accumulation of this sludge during cold weather when biological processes are inactive may result in an excessive demand on the oxygen resources of the stream during warm weather when biological oxydation is most active.

The oxygen resources of a stream consist of the dissolved oxygen normally present in the water, that supplied by reaeration particularly in passing over rapids or falls and oxygen supplied by growing plants. Because of their greater oxygen demand organic wastes have by far the greatest effect upon the general conditions of a stream and its aquatic life. The measure of the strength or concentration of various wastes in this respect is termed "Oxygen Demand" which is indicative of the amount of oxygen necessary to oxidize the unstable organic compounds to stable nitrates. If the dissolved oxygen of a stream is reduced to two parts per million by weight or about 25 per cent saturation, fish will die or seek other habitat.

From a public health standpoint bacterial pollution is, of course, the greatest factor. Such pollution, however, is confined almost entirely to that from the domestic sewage of municipalities. Paper mill wastes are not a factor in this type of pollution and do not affect the public health except in that they may reduce the capacity of a stream to assimilate sewage pollution or so affect the water as to reduce the efficiency of water purification plants.

Character of Pulp and Paper Mill Wastes

The suspended matter contained in pulp and paper mill wastes consists primarily of fiber and clay and has a very low oxygen demand, but in settling on the bed of streams may interfere with the spawn or spawning of fish. The organic wastes in solution vary greatly in strength or concentration, ranging from weak substances having little effect upon the stream to wastes nearly 100 times as strong as domestic sewage as is the case with sulphite waste liquor. The waste from a 50 ton sulphite mill is equivalent in its oxygen demand to the domestic sewage from approximately 80,000 people.

Disposing of Paper Mill Wastes

In some types of the industry the recovery and utilization of the suspended matter is practical but in others difficulties are encountered in utilizing this recovered material because of its inferiority and effect on the finished product. The greatest difficulty, however, is encountered in the treatment or utilization of organic wastes in solution such as sulphite waste liquor. One mill spent some $250,000 in installing a plant to recover and utilize this substance. The process was a failure and the equipment junked. Another mill recently spent over $200,000 in similar research and experiments without success. It is probable that the pulp mills have spent upwards of $1,000,000 in the past in trying to develop practical and economical processes for utilizing the sulphite waste liquor. Yet no generally satisfactory solution has yet been provided. Furthermore, the paper and pulp industry is spending approximately $1,000,000 annually in improving processes and methods of utilizing their various wastes and in stream improvement.

As a future policy and program the pulp and paper industry has employed a sanitary engineer to study and coordinate its activities in waste utilization and stream improvement. There are really several problems dependent on the specialized interests of the industry as sulphite, sulphate, strawboard, fine writing paper mills, etc. Programs for cooperation in their particular problems are being developed in these special groups. Such work requires not only recovery of the wastes such as fibers but their utilization in the product which in turn may affect the fundamental principles involved in the production of the original product.

The industry, therefore, has spent and is spending large sums in waste utilization and stream improvement. Furthermore it has initiated a definite, constructive, cooperative program to develop a satisfactory solution of the problem.

Necessity for Federal Aid

Unquestionably the ultimate solution of this problem involves scientific studies and research to develop economically practical methods to recover and utilize the wastes within the industry. The Forest Service with its laboratory at Madison, Wisconsin, is provided with necessary equipment and scientific personnel to assist in these investigations. Efforts are now being made by the paper industry to develop cooperative research involving equipment manufacturers, an individual mill and a certain group of mills interest in a particular work. It is believed that all of these interests will contribute to the work but there is need for an impartial agency such as the Forest Products Laboratory might furnish to collect, assemble and interpret data during the research.

The Browne Bill (H.R. 8561) would provide the missing link necessary to weld together this complete cooperative program of research and investigation. It would hasten the development of economically practical methods of waste disposal to improve stream conditions but would not interfere with their application in the various states nor with the policies of the various states' activities to improve the streams. We therefore urge its passage.

Paper Business Gradually Expanding in Chicago

Volume of Orders Transacted During January and February Exceeded Record Made in Corresponding Period Last Year—Increased Circulation and Advertising Benefits News Print Market Materially—Fine Paper Section Shows Signs of Improvement

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., March 5, 1928.—Reports from Chicago paper circles are at last more encouraging. It is reported from various sources that business in January and February surpassed that of the same months of 1927 in a number of lines of paper. This is a well worthwhile record in view of the fact that conditions have not improved materially in other lines of business. One well known Chicago paper merchant attributed the increased business and more pleasing outlook for the future to the fact that "paper merchants had quit howling about bad business, got used to it and started to tend their knitting."

Increased circulation and advertising has made the demand for news print very satisfactory. Book paper is improving and the fine paper business seems, on the whole, to have made the most optimistic showing of all the lines who's representatives were interviewed. The kraft paper market is reported not up to expectations but the tone of the market is excellent and increased business is expected confidently.

The Recent Conventions

The subject of conversation in paper channels is largely on two things—business and the recent conventions in New York which a large number of paper men from this city attended. Everyone is well pleased over the coming of Noble Gillette of the Chicago Paper Company into the presidency of the National Paper Trade Association. Mr. Gillette is a tireless worker in the organization and his host of friends in Chicago as elsewhere are confident of the future of the association with him at the helm.

"Jim" Coy of the Flambeau Paper Company and president of the national organization of the Salesmens Association of the Paper Industry expressed himself as well pleased at the turn out of salesmen at the banquet and meeting in New York. The program ran off without a hitch. The address of Mr. Van Amburgh was particularly well received and the salesmen made a big stride in perfecting their national organization.

Marketing Committee Plan

With the plan of the Marketing Committee under consideration by a committee it is confidently expected that some decision as to the highly commendable plan so ably presented before paper houses by James Smith, its chairman, would be reached in a month or two. General opinion in Chicago favors the plan, according to reports and a general selling of the use of paper, if carried through in a well organized and complete manner, is expected to be highly beneficial to every type of concern connected with the paper industry.

Pulp and Paper Display

An interesting display of wood pulp and paper is being provided by the Chicago office of the Swedish American Steamship Line in their display windows at 181 N. Michigan, Chicago. A large placard gives out the information that the foremost of Swedish industries is the manufacture of wood pulp and paper. Next to the United States the Swedish production of wood pulp is the biggest in the world with the present yearly output being over 1,500,000 tons, of which one-half is exported to the United States. Samples of bleached sulphite, kraft and unbleached sulphite were included in the display, along with several illustrations of Swedish mills.

News of the Trade

The Paper Mills Company, 517 S. Wells street, Chicago, has recently sent out to the trade a large and well illustrated broadside depicting the quality and uses of Clearlake Offset Paper made by the International Paper Company. Clearlake Offset is a bright neutral white, very good for offset reproductions. While primarily for offset work the paper may also be used for letter press work. A feature of the broadside is an illustration printed in six colors by the offset process showing how Clearlake Offset is adapted to that class of work. The reverse side of the broadside illustrates a demonstration of offset work in black ink.

The Albemarle Paper Company has recently moved its offices to the splendid new Bankers Building at Clark and Adams street, in the heart of the loop and near the financial section. Sample books and blank samples for dummy purposes are carried in this new headquarters for Albemarle Blottings for the trade. The new location is one of the finest that could have been chosen.

E. H. Kniep and F. Shaughnessy, formerly of the Graham Paper Company, Chicago offices, have gone to St. Louis to open up a business of their own. Both Mr. Kniep and Mr. Shaughnessy are very well known to the paper trade and the success of their business in St. Louis is confidently expected by their many friends. Another announcement from the Graham Paper Company is to the effect that W. V. Scholz, former vice president has retired though he will still hold a position on the board of directors. Fred Woods, formerly connected with the sales department of the Graham Paper Company, will assume the position of manager of the Chicago division, taking the place of Mr. Kniep. Mr. Woods is very well known in paper circles.

The Chicago Paper Association held a meeting at the Bismarck Hotel, Saturday evening, February 25. The meeting was very well attended and considerable progress was made in the many measures which that progressive association has undertaken for the present year. Chief among these plans is a continued working for a complete study of the costs of doing business and a comprehensive system of exchange information on credit. Both of these plans are now in use and are already producing good results. The Chicago Paper Association is again to be congratulated on its efforts to better the wrapping paper market in Chicago.

The Pilcher-Hamilton Company is now comfortably established in its new quarters at 349 West Ontario street, according to Edgar A. Hall, Jr. The new warehouse is worthy of a visit from any member of the paper industry visiting in Chicago. New and modern offices, the best of equipment and a standardization of methods that borders on perfection are characteristics of the new Pilcher-Hamilton location.

George S. Johnston, well known executive of the Western Newspaper Union, Omaha, Nebraska, and known to paper men wherever paper men are prone to congregate, is to become associated with the Champion Coated Paper Company, Hamilton, Ohio, on March 12. Mr. Johnston is to be the manager of the New York office of the Champion Coated Paper Company with headquarters in that city.

J. H. Vail Promoted to Western Post

[FROM OUR REGULAR CORRESPONDENT]

HUDSON FALLS, N. Y., March 5, 1928.—John H. Vail, for a number of years a member of the executive force of the Hudson Falls plant of the Union Bag and Paper Corporation, has been promoted to a position in the West and will hereafter be stationed at the Chicago offices of the Union Bag. Mr. Vail, who is an old employee of the Union Bag and Paper Corporation, will give up his residence in Hudson Falls and move his family to Chicago in the near future.

Wisconsin Paper Mills Plan Improvements

Interlake Pulp & Paper Co. to Completely Replace Digester Equipment—Thoroughly Modern Mitscherlich Plant to be Provided—Power Improvements at Bergstrom Plant, Neenah, To Be Started Shortly—Consolidated May Make Changes at Wisconsin Mill

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., March 5, 1928.—Digester equipment of the Interlake Pulp and Paper Company, of Appleton, Wis., a branch mill of the Consolidated Water Power and Paper Company, will be replaced completely this summer, according to announcement of C. K. Boyer, mill manager.

Plans are being drawn up at the present time for nine new digesters, each 14 by 40 feet. A new building will be put up to house them, so that this portion of the plant will be of the most modern type.

This step not only removes obsolete equipment, but will increase the pulp capacity of the mill from 15 to 20 per cent. Construction is to be started within about a month, and completion will be attempted by late fall.

Approximately $350,000 will be spent to provide a thoroughly modern Mitscherlich plant. During the last year the company spent $40,000 on new sand filters in order to eliminate the mud color of the pulp. A production gain of 500 tons was made during 1927, and the 1928 output is expected to show another increase.

Bergstrom Power Improvements

Power improvements at the Bergstrom Paper Company, of Neenah, Wis., will be started within a short time. Additional land along the Fox River has been purchased for the erection of a new boiler and power house. The boiler unit will be a building 50 by 110 feet in size, one story and of brick. It will house three new boilers. The power plant will be 50 feet square, and will contain new turbines of 2,500 K.W. capacity. These will replace equipment which has become obsolete. There will be no interruption of operations while the work is in progress.

Consolidated Changes Contemplated

Now that production of 250 tons of news print a day has been assured at the new mill of the Thunder Bay Paper Company, of Port Arthur, Ont., the Consolidated Water Power and Paper Company, of Wisconsin Rapids, Wis., owner of the Canadian plant, is considering seriously the changing of its products made at the Wisconsin mill. The plan is to abandon the production of ordinary news print, and to make certain grades of book and finer printing papers, using ground-wood pulp and bleached sulphite. As expressed by George W. Mead, president, in his annual report, this step will open up a wider and more diverse market, besides affording greater return.

This change is not definitely decided. Investigation and study are being made, with especial reference to the opportunities of sales distribution. It is believed that this step follows the trend of many Wisconsin mills which find themselves somewhat remote from pulpwood sources of supply, and unable to compete satisfactorily with the Canadian news print, produced at a lower cost.

In commenting on this situation and the prospects for 1928, Mr. Mead said, "Business conditions generally are not quite so favorable as they were a year ago. The newspapers used in 1927 a quantity of paper equal to 1926, the banner year for news print consumption, but many new mills came into operation during the year 1927 and the market has become over supplied.

"Sharp cuts in prices have not followed this over production, for many of the Canadian mills have merged into one selling organization and have succeeded fairly well in controlling the amount of production. This one group of mills represents nearly 5,000 daily tons and has operated from 80 to 85 per cent of actual capacity during most of the year. We have no agreement with any other concern or group, but it was only sensible and fair for us to use caution in bringing in our two Port Arthur machines, so we have hesitated to invade the market and secure enough business to enable us to operate at 100 per cent. We might have done that but it would almost certainly have resulted in a drastic cut in the market prices. So we are at present feeling our way along and have curtailed a little in operations in our Wisconsin Rapids and Biron mills.

"The new year is starting off a little better than we had expected and if the revival in business transpires as prophesied by many, we shall have nothing to worry about. In the meantime our salesmen are gathering in all business possible without doing injury to a sensitive market. It would be a fine thing at this time if we were prepared to make some of the better qualities of paper on one or two of our machines in the parent mill."

Logging operations of the Consolidated for 1928 include the cutting of 66,000 cords of spruce from its own lands in Minnesota and Ontario, and the purchase of 194,000 cords, making a total of 260,000 cords for one year's use. Purchases also will include 50,000 cords of hemlock pulp wood for the Wisconsin Rapids sulphite mill.

During the year 1927 the Consolidated companies manufactured and sold 142,000 tons of paper and pulp, representing sales receipts of approximately $10,000,000.

News of the Industry

Labor turnover in paper mills of the Fox River Valley has been the lowest during the last three or four months of any time within a year or two due to the abundance of applicants for employment. With the scarcity of work prevalent at this time in other lines, employees are staying at their posts faithfully knowing that they cannot find positions elsewhere. Mills have from ten to thirty applications daily from common laborers seeking jobs. Lack of construction work all through the valley is one of the underlying reasons.

George A. Whiting, of Neenah, Wis., has been elected president of the First National Bank, of Menasha, Wis., to succeed Harry A. Fisher, resigned. Mr. Whiting is a veteran paper mill owner and is president of the George A. Whiting Paper Company, of Menasha.

A. Scott Dowd, editor of *Paper Industry*, Chicago, spoke to an audience of 130 paper mill executives and foremen, at this week's session of the foremen's safety school at Appleton, Wis. Mr. Dowd emphasized the importance of co-operation between the foremen and their men. Foremen must take interest in the men and their ideas if there is to be respectful and willing obedience, he said. Perfect safety means perfect obedience. It is best obtained by letting the men do their own thinking by suggesting the right methods of procedure and not by commanding them, he said. M. G. Hoyman, superintendent of service at the Kimberly-Clark Company, Neenah, Wis., presided as chairman.

R. M. Radsch, superintendent of the sulphate mill ofthe Thilmany Pulp and Paper Company, Kaukauna, Wis., probably will try his hand at politics this spring. It has been announced that he intends to run for Mayor of Kaukauna.

Delbert Rowland has been appointed cost accountant and office manager of the Thunder Bay Paper Company, of Port Arthur, Ont., subsidiary of the Consolidated Water Power and Paper Company. He has held a similar position at the company's mill at Biron, Wis., for the last six years and has been transferred to the new Canadian mill.

Announcement is made of the death of Oscar Staniske, of Green Bay, Wis. He was night superintendent of the fiber division of the Hoberg Paper and Fiber Company, of that city. He was employed by the company for twelve years.

Isn't this what you want ?

A Vickery Doctor is needed on every

Breast Roll
Wire Roll
Press Roll
Smoothing Roll
Dryer
Yankee or M. G. Dryer
Calender Roll
Super Calender Roll
Sizing Roll
Coating Roll
Cooling Roll
Jacket Couch Roll

The Vickery Doctor keeps every roll always clean.

It requires no fitting or adjustment. It is absolutely non-scoring. Blades can be quickly and easily replaced.

Isn't this what you want in a doctor?

BIRD MACHINE COMPANY
SOUTH WALPOLE - - - MASSACHUSETTS

The Vickery Doctor

1744

Canadian News Print Mills Make Good Showing

Gross Income of Brompton Pulp & Paper Co. For 1927 Exceeded Previous Year's Record—Abitibi Power & Paper Co.'s Financial Statement Shows Earnings Equal to $11.33 Per Share on Common Stock—Dryden Paper Co. May Come Under New Control

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., March 5, 1928.—The Brompton Pulp and Paper Company's annual statement for the year ended December 31 last has just been issued. Gross income for 1927 amounted to $1,545,130, as against $1,240,954 in 1926 and $1,321,065 in 1925. The deduction of depreciation is an important factor in the current report, for the company wrote off $571,698, as against $252,000 the preceding year, when the company was operating three units instead of the two provided for in the latest report. The Groveton Paper Company has been sold in the meantime.

From the balance of $973,432 was deducted bond interest at $292,351, leaving net income for the year of $681,081, as against $667,514 in 1926. Deduction of Claremont preferred dividends at $1,750; preferred dividends at $155,200 and common dividends at $280,000, left a surplus for the year of $244,131.

The showing for the year, after the unusually liberal depreciation write-off, was equal to $3.74 per share on the company's outstanding common stock, as compared with $3.50 per share in 1926.

The Abitibi Power and Paper Company's financial statement for the year ended December 31 last shows earnings equal to $11.33 per share on the company's common stock, as compared with $11.56 in 1926 and $11.19 in 1925.

Operating profits for the year amounted to $4,213,489, this after income tax, as compared with $4,254,594 before income tax in the preceding year. Deduction of interest at $762,493 and depreciation at $546,422 left net profit for the year of $2,904,574, as compared with $2,961,995 in 1926. Preferred dividends paid amounting to $70,000 and common dividends at $1,250,000, left a surplus for the year of $1,584,574, compared with $1,829,495 in the preceding year when $1,062,500 was paid out in common dividends. Previous balance was brought forward at $7,847,893, making a total of $9,432,467. Transfer of $1,092,491 to depreciation reserve left a profit and loss balance in the current report of $8,339,976.

Working capital position shows an improvement, with excess of current assets over current liabilities standing at $3,761,489, as compared with $3,132,610 at the end of the preceding year.

Mr. Smith, in the course of his remarks, states that on account of market conditions, production and sales were materially reduced as compared with the preceding year. He also points out that on January 1, 1928, the company acquired through common stock purchase, the controlling ownership in Spanish River Pulp and Paper Mills, Ltd., Fort William Power Company, Ltd., Manitoba Paper Company, Ltd., Ste. Anne Paper Company, Ltd., and Murray Bay Paper Company, Ltd.

Quick Work at Soo Paper Mill

The new president of the Canadian Pulp and Paper Association, Col. C. H. L. Jones, of the Spanish River Pulp and Paper Company, is a resident of Sault Ste. Marie, Ont., and he tells with gusto a story about when the Duke and Duchess of Connaught were being shown through the Soo paper mill, at the time when Field Marshal H. R. H. the Duke of Connaught was Governor General of Canada.

The visit was carefully planned and was in a large part described in advance. But the reporters for the Sault Ste. Marie *Star* were present as the royal inspection began and hastened to the telephone in order to give one or two details to put in the "lead" or introduction to the story of the visit.

In less than half an hour, as the visitors stepped through the door of the mill, the Duke, the Duchess and the principal aide were each handed a copy of the Sault *Star* which described the visit and declared that the news print on which the story was told was manufactured a few minutes previously under the eyes of the visitors.

Colonel Jones assured his guests that such was the fact, that rolls of paper had been hurried on trucks to the *Star* office and that the press room organization there had been such as to enable the rolls immediately to be placed on the presses. Circulation trucks had at once hastened to the mill with the completed product.

"My word!" was the comment of the royal duke.

Dryden Paper Co. Rumors

There has been evidence on the Montreal stock market lately of much interest in the shares of the Dryden Paper Company, of Dryden, Ont., which is being operated under a receivership. The rumors are that negotiations have been under way for handing over the property to new control. A cash offer of $50 per share was recently turned down, it is said, and rumor now has it that an offer of $55 will be made. The shares are selling on the Montreal curb market at around 45.

A Sears-Roebuck Contract

The Fraser Company, of Edmundston, N. B., is reported to have closed a big contract for paper with the Sears-Roebuck organization. The paper will be made in the company's mill at Madawaska, Maine, and will be used for mail order catalogues.

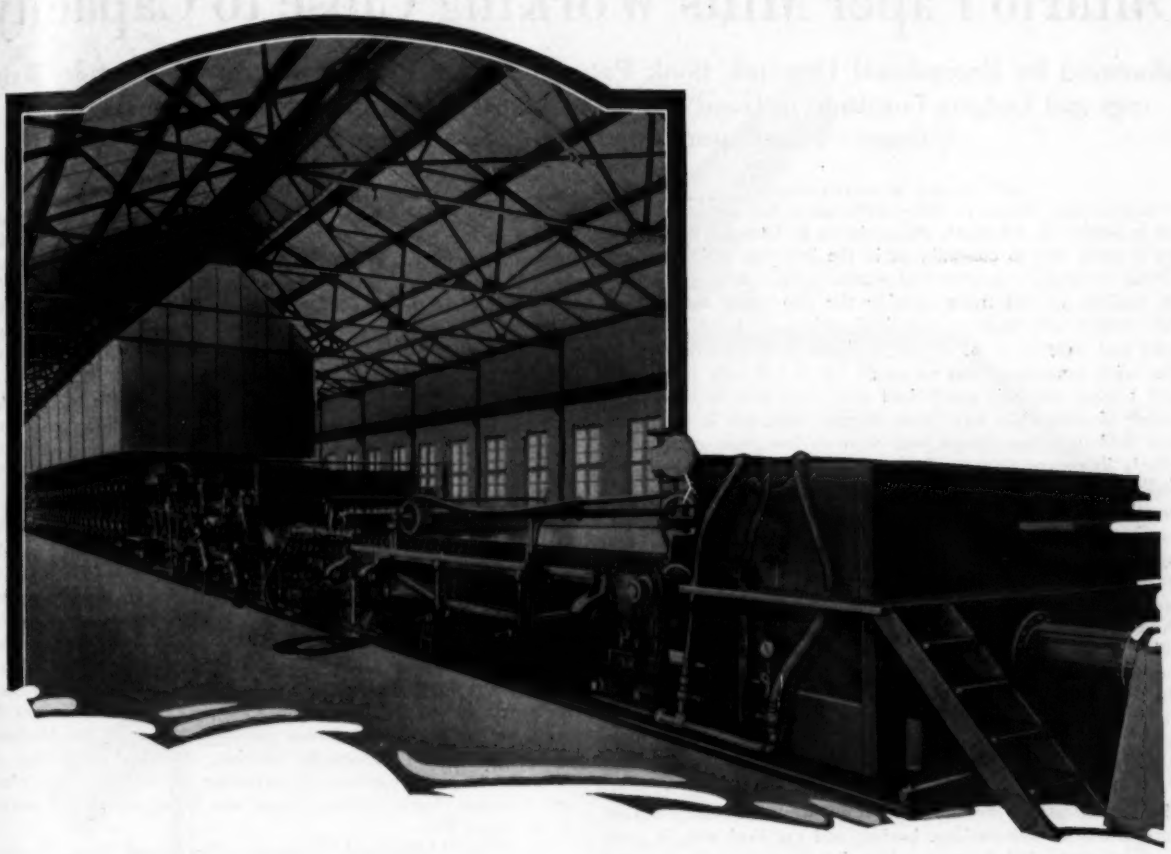
Receivership for Clyde & Sissiboo Co.

As a result of the depressed state of the ground wood pulp market, the Clyde and Sissiboo Pulp Company, of Clyde River and Weymouth, N. S., is to go into receivership and will be operated for the bondholders by the Royal Fruit Company. The company owns a ground wood mill at Clyde River of a daily capacity of 27,000 pounds (dry), and another at Weymouth, of a daily capacity of 80,000 pounds (dry). It also owns undeveloped water powers in Nova Scotia, and has 76,000 acres of timber limits on the Clyde and Sissiboo Rivers. The entire investment interest in the company is confined to its $470,000 bond issue, which was originally guaranteed unconditionally by Becker & Co., of England. The guaranteeing company, though, went into liquidation some years ago, when the market for pulp and paper declined.

Later the Clyde and Sissiboo Pulp Company properties passed into the control of the Edward Lloyd Company, Ltd., of London, England. That company guaranteed the interest on the bond issue as long as it controlled the property. But the Edward Lloyd organization has thrown up its interests in the plant. Hence, the Royal Trust Company has made application to the Nova Scotian courts to be appointed receiver of the property.

New Edge Moor Cross Drum Boiler Catalog

The Edge Moor Iron Company, manufacturers of water-tube boilers, of Edge Moor, Del., have just issued a new booklet which presents in interesting and easy to read form the principal facts concerning the Edge Moor cross drum boiler. The numerous actual photographs, illustrating both design and construction and the comparatively small proportion of text combine to tell the story completely and briefly. The latter section of the booklet, reproduced by special permission of the Boiler Code Committee of the American Society of Mechanical Engineers, will be of practical value to operating engineers. The Edge Moor Iron Company will be glad to send copies of this interesting booklet to readers who are interested.



Wire Changed in 1 Hour

The operations required in making wire changes on the Keystone Removable, Quick Change Fourdrinier are extremely simple.

The Kilberry Suction Couch Roll is moved longitudinally by power and suspended from rear journal for quick and convenient change of wire.

Independently removable table roll and suction box sections, with power raising and lowering device, simplify pitch adjustment of wire and lowering onto the rails. Easily hand removable on roller bearing trucks.

Shake adjustable while running. Breast roll and table rolls shake independently of the rigid supporting frames. Bronze table roll support frames give great strength and stiffness without excessive weight.

Let us send you complete information on the numerous advantages of the Keystone Fourdrinier.

Our Products Meet Our Promises

KEYSTONE Fourdrinier

Downingtown Mfg Co. Downingtown Pa.

Ontario Paper Mills Working Close to Capacity

Influenced by Exceptional Demand, Book Paper Mills Are Particularly Active—Bonds, Writings and Ledgers Continue in Good Request—Light Weight Papers Moving in Excellent Volume—Distributors Complain of Small-Sized Price War

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., March 5, 1928.—Although a fair amount of business is passing in wholesale paper circles in Ontario, the jobbers have a good deal to complain of in the basis on which business is being conducted. A price-war seems to have developed in certain sections of the trade—notably the fine paper section—and while dealers are booking fair-sized orders of bonds, writings, books and ledgers, a lot of the business is being taken at cut rates, with consequent loss of profit. It is not only in the fine paper section that this small-sized price war has developed. A number of other lines have been affected, although in the coarse paper field there has always been more or less price-cutting, particularly in regard to paper bags. Price lists have not been materially altered as they affect the standard lines of paper and in a general way prices of paper may be said to be fairly firm. But there has undoubtedly been a lot of competition among the dealers themselves and some of them have not hesitated to trim their figures in order to secure business. It is likely only a passing phase and does not greatly affect the paper market as a whole, although the trade generally admits that it is upsetting and unsettling in its aspect and liable to lead to serious results if not checked.

In the meantime, the volume of the wholesale paper business throughout the province and apparently in most parts of Canada is equal to, and better than, during the first three months of last year. The demand for all classes of paper has been steadier and of late there has developed a disposition on the part of printers and other sections of the consuming trade towards quantity buying. There is less broken package buying, and car load lots, in some instances, are replacing few-ton lots that were prevailing a year ago. Most stationery lines are moving well and there has been an improvement in demand for converted lines. Envelopes, for instance, are in good call and the blank book trade indicates revival in business and commercial circles generally.

Paper manufacturing operations are on a satisfactory scale with practically all the mills working close to capacity. Book paper mills are particularly active under a really big demand for that line of paper. A number of the big book paper manufacturing firms are considerably behind with their orders and have commitments that will keep them busy for many weeks to come. Bonds, writings and ledgers are in good demand and sufficient business is in sight to guarantee active operations throughout the spring months and well into the summer. In the light weight paper field business is keeping up well with a good demand for all tissue, toilet and specialty lines. It takes a lot of business to keep a big mill like Interlake Tissue operating full, but the fact remains that this organization in the Niagara Peninsula is enjoying a splendid volume of trade and there is very good prospect of its being sustained indefinitely. This is in the face of considerable foreign competition. Manufacturers of greaseproof and glassine are complaining of a lot of competition from European sources but on the whole they are maintaining a strong grip of the local market and are generally prosperous. Box board plants are all busy under a good demand for the product from the paper box industry, which is active throughout the Dominion.

Port Arthur Mill's Anniversary

Arthur G. Pounsford, manager of the Port Arthur, Ont., division of Provincial Paper, Ltd., was host recently to a number of the original employees of the firm at the Prince Arthur Hotel. It was the occasion of the tenth anniversary of the first cook of sulphite pulp by the Port Arthur plant when the mills were the property of the Port Arthur Pulp and Paper Company. In an interesting address Mr. Pounsford recalled the fact that the staff at the mill ten years ago consisted of 170 men, of whom 51 were still in the company's employ. A large proportion had been transferred from their original work to other branches during the past few years. Mr. Pounsford expressed pleasure in finding so many of the original crew still helping him to make the mill the continued success that it had been and voiced the hope that all would be present when the second decade anniversary is held. The manager expressed appreciation of the treatment accorded the company by the civic authorities of Port Arthur from the first day that A. G. Hinzke, superintendent of the plant, and he, had arrived in the city.

News and Jottings of the Trade

Provincial's Papyrus, the house organ put out by the Provincial Paper Mills, Ltd., head office, Toronto, has been mailed for February to paper dealers and printers. It appeared in a gayly decorated cover of Alladin stock and included in the letter press are many timely articles of value to the users and sellers of paper.

The death took place in Toronto a few days ago of Sergeant-Major John William Flynn, who was an interesting figure in paper and lithographic circles in that city. He was aide-de-camp to Lord Kitchener in the Egyptian campaign and came to Toronto 22 years ago when he and James Husband perfected the Husband system of keeping lithography on zinc. He died at the age of 72 years and was prominent in recruiting circles in Toronto when the Canadian Expeditionary Force was being raised for service in the Great War.

The Miller Lithographic Company, King Street West, Toronto, have purchased property on Adelaide Street West, that city, and will shortly proceed with the erection of a modern lithographing plant on the new site.

The directors of the Spanish River Pulp and Paper Mills, Ltd., held a routine meeting in New York City this week. George R. Gray and Col. C. H. L. Jones, from Sault Ste. Marie, went down, together with J. G. Gibson, secretary, T. H. Watson and T. W. Sime, directors, from Toronto.

John Hewitt, Jr., president of Paper Sales, Ltd., Toronto, has returned from a business visit to Quebec, Montreal and Boston in the interests of his firm.

Stanton Mead, of the Consolidated Water Power and Paper Company, and the Thunder Bay Paper Company, was in Fort William, Ont., a few days ago on business.

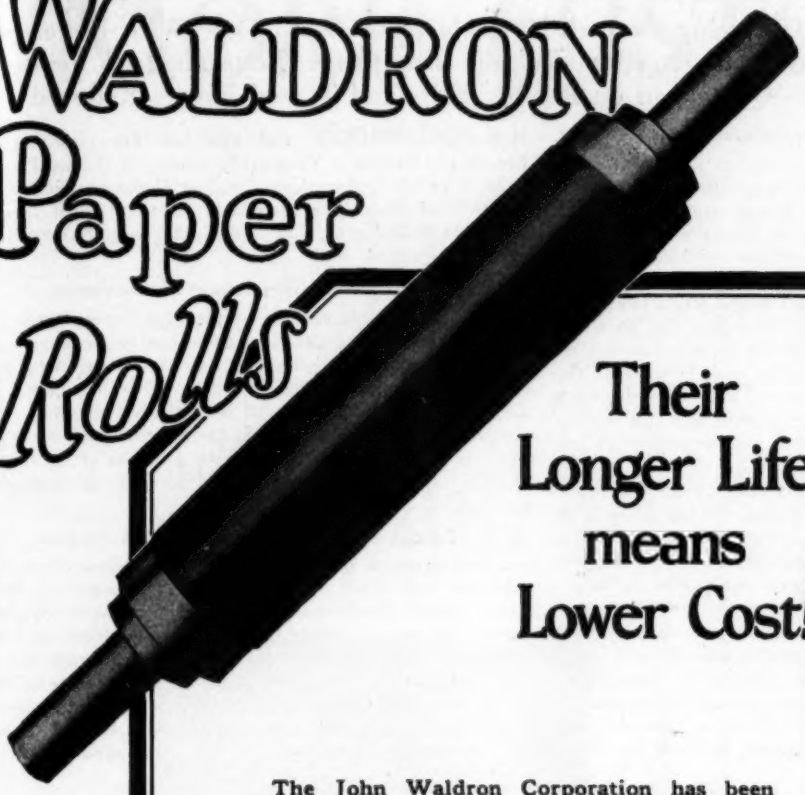
S. F. Duncan, secretary of the Provincial Paper Mills, Ltd., head office Toronto, is spending a few weeks at Pinehurst, North Carolina.

Directors of the Ontario Pulp and Paper Makers' Safety Association met in Toronto this week and prepared the reports for the annual meeting to be held in Toronto this month. Representatives from a number of the leading Ontario pulp and paper mills were present.

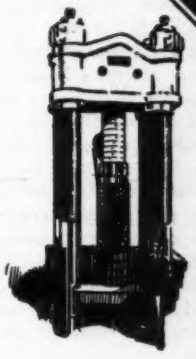
Paper Sales, Ltd., King street, Toronto, are putting out samples of three new lines of fancy box coverings, "Kalo," "Golden Spray" and "Paisley," for which they are the sole Canadian agents.

The employees and officials of the Fort Frances Pulp and Paper Company, Fort Frances, Ont., tendered a banquet to the retiring superintendent, Paul Haas, on the eve of his departure for Oregon. The guest of the evening was preesnted with a beautiful gold watch, chain and pen knife. Peter Bruneau presided and a splendid program was carried out. Mr. Haas has been succeeded as superintendent by Mr. Rickenson.

WALDRON Paper Rolls



Their Longer Life means Lower Cost!



One of the huge presses capable of exerting 1500 tons pressure—used in compressing Waldron Paper Rolls.

The John Waldron Corporation has been making paper rolls for over seventy-five years during which time valuable data and experience has been gathered.

Our Engineering Department will study your particular conditions and will, without obligation to you, submit recommendations that will help you to reduce the cost of your paper rolls by increasing the yardage or the number of operating hours.

HAVE YOU AN INSTRUCTION SHEET AS TO HOW A PAPER ROLL SHOULD BE RUN IN? IF YOU WRITE—A COPY WILL BE SENT TO YOU

JOHN WALDRON CORPORATION

MAIN OFFICE AND WORKS NEW BRUNSWICK, N. J.

208 W. Washington St.
CHICAGO

30 East 42nd Street
NEW YORK

Demand for Paper Improving in Philadelphia

Pennsylvania Paper Mills Operating on Broader Scale in Order to Cope With Increased Request—Fine Papers Moving in Excellent Volume Due to the Betterment of Printers' Operating Schedules—Quotations on Roofing Felts and Tarred Papers Reduced

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., March 5, 1928.—As the closing days of the past month gave evidence of a fairly good demand for paper generally, distributors were hopeful of brighter business with the approaching springtime. That demand has been stimulated by the preparation for the coming seasonal activity of industry on a broader scale was stressed in the quickening of many lines that so far this year have been moving slowly. While prices have been firming within recent days on many of the grades that have not been so active since the early year there was further stiffening of values on the part of the mills during the week in some of the coarse grades and specialties. Most of the mills are operating on a broadening scale. While many mills in the local field still operate at from 75 to 80 per cent of capacity a greater proportion are nearing the full time schedule.

As printers assume a broader operating schedule the fine paper market becomes more active with all grades moving along with the tide of renewed interest. The printing industry is looking forward to brisker business with the current month and is more inclined to heed salesmen in their appeal for orders in larger purchases than have been noted for several weeks past. Cautiousness on the part of the paper dealer in stocking so far this year has created a shortage of some of the grades that are now being sought with the reviving printing market. Dealers are complaining that they have been caught short of many grades that they anticipated would not be active before late March and so have not been able to take advantage of the reawakened demand for these commodities.

There has been a stiffening in the quotations of sulphite manilas and drug bond wrapping papers, according to mill announcements made last week. The increase has been fractional but shows that the trend is upward for the springtime. Other lines have been steadily held at the levels of the preceding week although prices show evidence of advancing, according to visitors from the manufacturers of nationally known brands.

On March 1, local dealers in roofing felts and tarred papers were informed of the proposed reduction in quotations from the manufacturers and so altered the price lists to meet the levels of the lower values. Despite the continued livelier market for other grades of building papers such as compoboards the demand for roofings has declined and in order to stimulate buying the reductions were forthcoming. Although weather conditions have been propitious for several weeks, building requirements in roofings have slumped. It is unlikely that the lower values will prevail long as the builders trades are now listed with contracts that will cover the entire spring period with an increase over the preceding year, according to week end announcements and statistics of contracts already let.

All grades of paper stock have been moving with regularity. Prices have not yet been advanced but expectations are for upward revision with the continued mill buying as heavy as it has been in the past week. Commoner grades are scarce and accumulations at a minimum, so that it will be difficult to secure volume orders at an early date.

Wholesale Waste Merchants To Dine

Arrangements for the coming annual banquet of the Wholesale Waste Merchants Association of Philadelphia have been completed. The yearly social gathering of the organization will be held March 27 at the Hotel Lorraine. The committee in charge of the entertainment has as its chairman Harry Bailey, of the Hemmingway Company, and with him are associates George French and President Thomas A. Kenny, of the local body, and member of the International Trading Company. Mill men and members of the Waste Merchants Associations of New York, Baltimore, Washington, Boston, and other large Eastern cities, are expected to attend.

Paper Trade Hears Report of Convention

When the monthly meeting of the Fine Paper Division of the Philadelphia Paper Trade Association met in the Bourse Restaurant during the week the members heard the report of the National Convention from the official delegate of the fine paper section, Leon Beck, head of the Charles Beck Paper Company. Mr. Beck attended the annual gathering of the national body in New York and a complete detailed report of the activities of the Fine Paper Division at the convention was read from his accounting of the meetings.

Special Session of Wrapping Paper Dealers

A special session of the wrapping paper dealers, of an informal character, was called by Simon Walter, president of the Philadelphia Paper Trade Association, and head of S. Walter Inc., 144 N. 5th street. While the meeting was called by President Walter it was not in the nature of an official gathering of the paper trade organization. No announcement is made of the purpose of the gathering which was concerned with the coarse paper branch of the industry solely and the promotion of its welfare. All the prominent members of the trade were present at the session.

Changes Effective in Garrett Buchanan Co.

With the merger of the cover paper management with that of the book paper department under direction of George Weaver, announcement is made of the appointment of Joseph Miller as the manager of the bond and ledger department. Mr. Miller who has been associated with the Garrett Buchanan Company for the past 22 years was (before the merger of the cover and book paper departments) manager of the book paper sales. He has been identified with the paper trade for 28 years. Fred Roll, who until the present changes took place was manager of the bond and ledger department, has resigned from the Garrett-Buchanan Company, his resignation being effective last Friday.

President Morgan H. Thomas, of the Garrett-Buchanan Company, who was the recipient of a testimonial dinner just before his departure for the south, is now vacationing in Palm Beach and Miami, where he is accompanied by Mrs. Thomas and their son Ellwood Thomas. He carried with him the handsome leather golf bag which was presented by the employees at the testimonial gathering and will use it on the links in the southern resorts. Before the return trip he will make a brief stop at Havana.

Ajax Paper Mills in Receivership

For the purpose of protecting the assets of the Ajax Paper Mills, Inc., of Buck Run, near Coatsville, Pa., while efforts are being made to pull it out of a temporary financial embarrassment, Judge W. H. Kirkpatrick, of the United States District Court here, appointed Vincent R. Hann and Walter E. Greenwood, receivers in equity for its affairs. The receivership was filed in a friendly suit by Bulkley, Dunton & Co., of New York, who are creditors for $10,245. The receivers posted bond for $25,000. The paper company, which manufactures tissue paper, napkins and other paper specialties, joined in the request for the receivership because of its inability to continue business unhampered due to lack of work-

MORE HISTORY!

"Simple facts not foolish statements."

CHAPTER XI.

This mill made 80 tons test liner board. They added 27 dryers and made 103 tons. Their beaters were not sufficient. We rebuilt two and they got all the stock they required, made better quality and indicated no perceptible increase in horse power. 28.7% increase and two Dilts rebuilt beaters did the trick.

Dilts NEW TYPE Beaters on Kraft.

There is no question about the superiority of the modern beater. No mill with old beaters can compete today.

You can reduce your cost of making, increase your tonnage, and improve your quality by letting us rebuild your beaters or replace them with our NEW TYPE Beaters.

Think it over. Quality, quantity, cost!

"Your paper is made in your Beaters."

Dilts

MACHINE WORKS, Inc. FULTON, N.Y.

EXPORT OFFICE ~15 PARK ROW~ NEW YORK CITY

ing capital, although its assets are stated to be $581,037 and its liabilities $249,224.

The Ajax Mills are owned by the Ajax Paper Mills, Inc., with A. A. Sere as president, Leonard Fitzgerald, secretary and treasurer, and Clarence Mellinger, superintendent. They have a capacity of 20,000 lbs. every 24 hours. The mills are among the pioneer paper making plants in this section of the State and have recently been extensively electrified, which necessitated the expenditure of a large amount of its working capital. Other improvements have been made within recent years so as to modernize the paper making units and buildings.

Bogalusa Mills Offer to Trade

When Douglas Stuart of the Bogalusa Paper Company, of Louisiana, called on the wrapping paper dealers in this city last week, he offered the Philadelphia patrons an attractive line of krafts made in the southern mills and reported the company as well sold ahead on springtime orders. He reports that the southern plant has booked a good volume of orders and that there is no likelihood of recessions in prices in the kraft market. He is on his way to the Western distribution trade.

New Butchers Fibres for Bayless Co.

Two entirely new products were offered to the Quaker City trade by the Bayless Manufacturing Company, of Austin, Pa., when its representative, David Scott, called on the distributors, last week. The attractive proposition was the splendid line of imitation parchments used by the grocery, delicatessen dealers, bakers and confectionery trades. The new imitation parchments are reasonably priced for the good quality of the article. The other item was the steam finished butchers fibers known as the BA maco Brand, a high finished wrapping paper of excellency in texture. No changes have been effected in the other Bayless products this year. Mr. Scott also represents the Port Huron Sulphite Paper Company and the Carolina Fibre Company.

Paper Men Join in Ad Women's Frolic

Paper trade associates who joined in the grand ball and frolic of the Philadelphia Advertising Women's Club at the annual gathering held at the Bellevue Stratford Hotel last Monday were Leonerad J. Peck, of the Paper House of Pennsylvania, John Franz, of A. Hartung, Inc., and Leon Beck, of the Charles Beck Paper Company. All attended in costume and joined in the banquet and prize events along with entertainments which made up the evening's program.

Richie-Howarth Co. Changes

Following the resignation of Anthony Richie from the Richie-Howarth Paper Company, 804 Sansom street, an announcement was sent out by the reorganized company to its associates in the paper trade and the allied industries last week. This announcement states that "the officers and board of directors desire to announce that there are no changes in the personnel of their organization and they will continue to give the same efficient service as heretofore." It further states the following:—"Harry A. Blessing, superintendent of the ruling department for many years, will continue in that capacity, where he has enjoyed a large following for his appreciation of customer interest, accuracy in ruling, fairness and dependable service." The announcement states that the Richie-Howarth Company is an Eagle A Service House and carries the American Writing Paper Company's products in completeness, in conjunction with its paper ruling plant.

These officers were elected following the resignation of Mr. Richie from the presidency of the company and the severing of his association with the concern:—President, J. R. Howarth; Vice President, Harry A. Blessing; and Secretary and Treasurer, A. Markley. The company will continue as a corporation operating under the laws of Pennsylvania. It is the only paper house that has become linked with the distribution of a single mill product featuring exclusively the American Writing Paper Company lines. It has been linked with the paper trade for the past five years although originally a paper ruling house before the merging of paper interests of President Howarth with the ruling business of Anthony Richie. Mr. Howarth has been identified with the paper trade for a score of years. The paper ruling plant is conducted on the fourth floor of the building while the paper offices are located on the main floor of the Lindsay Building.

News of the Indiana Trade

Arthur Osborn of the Osborn Paper Company of Marion, Ind., has been named a member of the board of directors of the Spencer Hotel there. The hotel is one of the finest in the state.

The Empire Box Corporation, an Illinois corporation, has qualified to do business in Indiana. The company manufactures and sells at wholesale and retail paper boxes and containers. A total of $5,000 of its capital stock is represented in Indiana. Roland Obenchain of South Bend, Ind., has been named agent for service of process and the Indiana offices of the company will be in that city.

Several hundred persons visited the exhibit of printing at the Hotel Lincoln given by the Century Paper Company of Indianapolis. Among the 1,800 specimens gathered from all parts of the country by two large paper manufacturers, were samples of virtually every kind of printing known to American graphic arts. Students of art, commercial designing and advertising were especially attracted by the display, with high school classes being entertained almost every day. The display was one of the most elaborate ever seen in Indianapolis.

The Century Paper Company of Indianapolis has issued a new catalogue, which is one of the most de luxe samples of price lists issued in Indiana in a long time. It is well printed, well bound and with a handy index.

The C. P. Lesh Paper Company of Indianapolis has completed mailing the last of six pieces of literature on Little Ridge announcement stock made by the C. B. Rising Paper Company, which the local company stocks both in flat and announcement.

A farewell reception to Frank E. Floyd of Indianapolis, who becomes secretary of the National Paper Trade Association, and Mrs. Floyd, was given recently by members of the Third Christian church. Mr. Floyd has been a member of the Third church 42 years and in much of that time has been an officer in the organization.

Paper Mill on the Auction Block

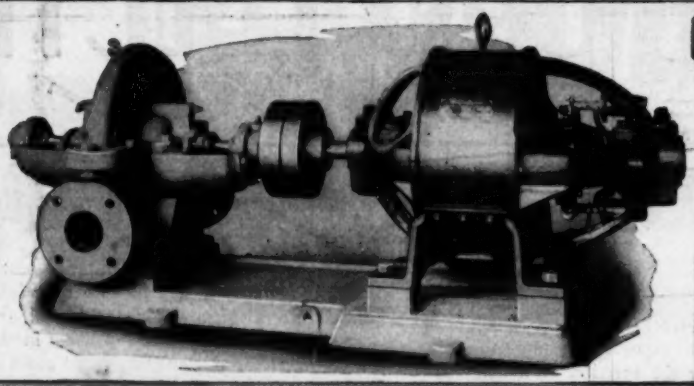
[FROM OUR REGULAR CORRESPONDENT]

DENVER, Col., March 3, 1928.—The Colorado Pulp and Paper Company, its plant located in Adams county just outside the city limits of Denver, was placed on the auction block here February 29, but there were no bidders. Previous to the hour of sale, Lucy J. Myers, Alonzo Emerine and S. J. Schofelberger, petitioned the court to withhold the sale, offering money to keep the mill in operation, but Judge Samuel W. Johnson rejected the intervention, stating that it could not be admitted as the parties had been previously interested in the case.

George Beck, receiver for the company, says that the ruling of the court makes it mandatory that he continue to offer the business in its entirety for sale, as often as is necessary to sell the property at a price not less than $300,000. This may be done by selling the property in separate parcels or in one lump. The successful bidder must deposit a certified check to the amount of $25,000.

The mill is built of steel and concrete, is airy and well lighted at all times. The machinery when installed about 1925 was new, therefore should be in good condition. Operation has not ceased, but from the time the mill started up to now there has been money or legal trouble, yet the field for card board, its principal output, is vast.

Many are of the opinion that if this property could be cleared of all factions and run on a business basis it would pay and pay well and this conclusion seems warranted by the large demand for card board.



Only Ball Bearings Give Such Service

CONDITIONS that eliminate other types of bearings from consideration are overcome when New Departure Ball Bearings are used, as no other bearing equals them for precision and permanency. These built-in qualities are retained intact throughout their extremely long life.

In pumps, for example, uniformity of impeller clearance can be maintained at all times, for New Departures provide rigid shaft support definitely and permanently, without friction or wear and the consequent need of readjustment.

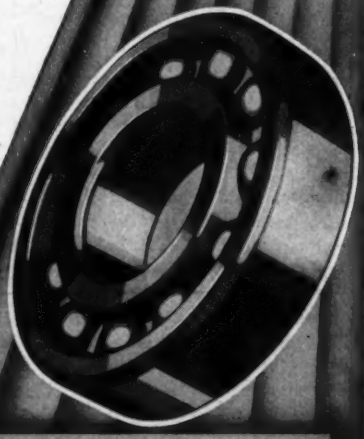
Again, besides reducing over-all dimensions appreciably, it often costs less to build with ball bearings.

Further, New Departures can be effectively sealed, preventing intrusion as well as extrusion, retaining lubricant within the bearing housing and reducing lubrication attention to a matter of only infrequent application.

All these advantages are obtained in Weinman Pumps by the use of New Departure Ball Bearings.

It costs you nothing for consultation with New Departure engineers and may save you many dollars. Write for engineering data. Sent on request.

THE NEW DEPARTURE MANUFACTURING COMPANY
BRISTOL, CONNECTICUT
Chicago San Francisco Detroit



New Departure Quality Ball Bearings

Whenever you have a bearing problem our expert engineers will be glad to discuss it with you personally. We will help you to do your thinking.

CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills

Construction News

Long Island City, N. Y.—Huschle Brothers, Inc., Anable avenue and Creek street, manufacturer of paper boxes and containers, has plans nearing completion for the erection of a new three-story plant on Thirty-seventh street, near Forty-seventh avenue, to be 100x125 feet, reported to cost close to $125,000, with machinery. Bids will be asked and work placed under way at an early date. Frank S. Parker, 119 West 57th street, New York, is architect. Anthony J. Huschle heads the company.

Bellingham, Wash.—The San Juan Pulp Manufacturing Company, Laurel and Cornwall avenues, has tentative plans under advisement for the construction of a new addition to its plant, to provide for an increase of about 40 tons per day, doubling the present capacity. The installation will consist of two new digesters and auxiliary equipment. Estimated cost has not been announced. Ossian Anderson is president.

Kansas City, Mo.—The Crook Paper Box Company, 505 West 25th street, Kansas City, has leased property at 906-12 East 15th street, and will remodel and improve present structure for a new plant. It is proposed to build an additional floor. Equipment will be installed at an early date. It is understood that present works will be removed to the new location. E. N. Crook is president.

St. Paul, Minn.—The Waldorf Paper Products Company, Myrtle and Pillsbury avenues, is arranging for immediate award of contracts for power plant equipment on bids recently received for its proposed new power plant addition. Work will include installation of generator unit, engine, switchboard and instruments, and is reported to cost more than $200,000. Ralph D. Thomas, 1200 Second avenue, South, Minneapolis, is engineer.

Evansville, Ind.—The Evansville Bag Company is considering the rebuilding of its plant, destroyed by fire February 29, with loss reported in excess of $40,000, including equipment. The building is owned by Gustav Meyer. Jacob Endress heads the Evansville company.

Albany, N. Y.—The Albany Perforated Wrapping Paper Company is arranging for an increase in capital from 96,000 shares to 156,000 shares of stock, no par value, and at the same time plans for a bond issue of $3,000,000, a portion of the proceeds to be used for general financing and operations, expansion, etc.

Baltimore, Md.—The Chesapeake Paper Board Company, Key highway, is reported to have consummated plans for its proposed new plant addition, including alterations in present mill, to cost approximately $75,000, and will proceed with work at an early date.

Mexico, Mo.—The American Envelope Company of Missouri, Inc., recently organized by A. S. Mortimer, Mexico, and associates is reported planning the early operation of a local factory for the production of envelopes and kindred paper specialties.

Lambertville, N. J.—The Cellulose Company, Baldwinville, N. Y., has been in negotiation with the local Chamber of Commerce, with view to taking over the former local plant of the William Mann Paper Company on South Main street, now held by the Mann Paper Company, Inc., New York, and not running at the present time. While negotiations are still in progress it is understood that acquisition of plant is very indefinite and accordingly the Cellulose Company, it is said, will arrange for other facilities for proposed expansion, and likely in this same vicinity. The proposed new mill is reported to cost more than $75,000.

Troy, Ohio—The Gummed Products Company, manufacturer of adhesive paper tapes, etc., has secured a permit for a proposed new addition to its plant, one-story, 50x60 feet, on South Union street, and will proceed with superstructure at an early date. It is estimated to cost about $30,000.

St. Paul, Minn.—The Minnesota Mining & Manufacturing Company, Goodrich avenue, manufacturer of sandpaper and other abrasive paper stocks, has work in progress on a new two-story and basement unit, 152x575 feet, designed to replace plant destroyed by fire a number of months ago. It is proposed to have the structure ready for equipment installation at earliest date. Estimated cost of entire project is placed at $200,000. Tolz, King & Day, Builders' Exchange, are architects and engineers.

Bordentown, N. J.—The Egg Saver Package Company, recently organized with capital of $300,000, by F. W. Overton, 7 Ward street, Bordentown, and associates, is said to be planning the early operation of a local plant for the manufacture of corrugated egg case fillers and kindred board products. It is understood that the company will succeed to an existing business, and will carry out an expansion program. George W. Swift, Jr., is an official.

South Windham, Me.—The Androscoggin Pulp and Paper Company is reported planning the rebuilding of one of the units of its mill, destroyed by fire February 27, with loss estimated at close to $25,000, including building, equipment and stock.

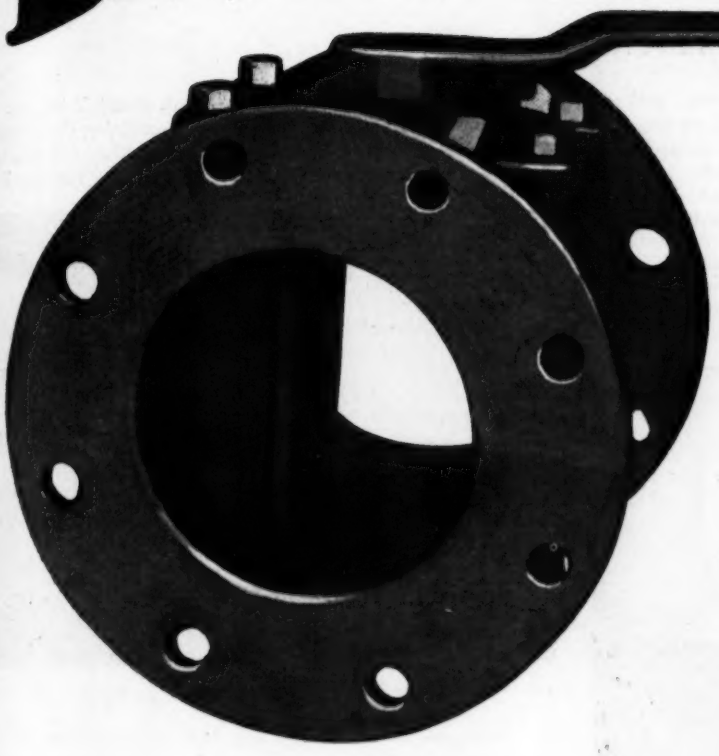
New York, N. Y.—John H. Free, 100 197th street, Hollis, L. I., and Henry Stapel, 454 Seneca street, Ridgewood, Brooklyn, have organized a company to operate a plant in the vicinity of New York, for the manufacture of paper boxes, containers, bags, etc., and propose to begin operations at an early date. The company will be known as John H. Free, Inc., with capital of $25,000.

Harrisburg, Pa.—The Cahill Carton Company, Foster and Cowden streets, has tentative plans under consideration for general expansion in present facilities. It is understood that a site will be selected in another part of the city to carry out the program. The present plant is concentrating on the production of folding boxes and other cardboard containers suitable for shoes, hats, and similar merchandise with rated output of 240,000 containers per day. In connection with plant developments, the company is reported considering the establishment of branch factories in the near future in the vicinity of St. Louis, and in the New England district, to specialize largely in shoe box production at these centers.

South Beloit, Ill.—The Beloit Iron Works, Beloit, Wis., manufacturer of paper mill machinery, will defer erection of proposed new plant unit at South Beloit, it is said, for a number of months, project being held in temporary abeyance. The unit is reported to cost more than $60,000.

Toronto, Ont.—The Dominion Envelope and Carton Company, Toronto, has filed plans for the construction of a new plant unit. The mill will be one-story, and will include steam power house. Entire project will cost approximately $175,000 with machinery.

Easier and Quicker to operate~



Valley Plug Valves are made of cast iron, equipped with a brass plug ground into position, and operates on a rotating principle. Learn more about these valves. Our special booklet on Valves will be sent you upon request. Write for it today.

Because they are made without ledges, gates, sharp corners, springs or intricate mechanism, Valley Plug Valves are easier and quicker to operate than ordinary valves. One turn of the handle shuts or opens the valve —and when it is shut it cannot leak. It is shut tight.

Valley Plug Valves require a minimum of space and can be placed in any practical position necessary to use on your pipe lines. Angle position does not affect its efficient operation. Use under unusual conditions has increased the popularity of Valley Plug Valves with paper mills everywhere. Now over 1150 are in use—testifying to the service—ability and economy of these valves. They are made to last—and once installed their economy in use is apparent. Mills that have at first installed three or four now have fifty and one hundred.

VALLEY IRON WORKS CO.

Machinery for Paper and Pulp Mills

APPLETON WISCONSIN

New York Office: 350 Madison Avenue

Western Manufacturing & Sales Division: Smith & Valley Iron Works Co., Portland, Oregon

Power Plant Section

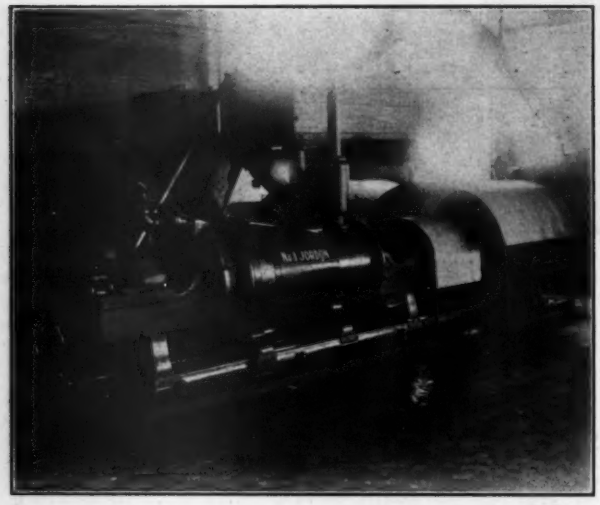
Reducing Power Costs Through Unit Treatment

Conducted by REGINALD TRAUTSCHOLD, Consulting Engineer

Modernize the Mill and Power Plant

Anti-Friction Bearings

The discussion on "Anti-Friction Bearing Dividends," published in these columns August 4th, 1927, featured primarily the economies effected in the operation of paper machines when equipped with anti-friction bearings, statistical records culled from four quite typical instances being presented. Many more such cases could readily be cited, but so very general have been substantial savings realized in such manner that the manufacturers of Fourdriniers and cylinder machines have in many instances standardized on such refinements. Likewise, in the construction of other units of essentially paper making character, as, for example, in the case of the Jordan engine. Before passing on to a consideration of anti-friction bearing applications to motors, fans, pumps and other power plant and industrial apparatus commonly included in the mechanical equipment of pulp and paper mills, however, it might be well to present some concrete evidence and pertinent facts regarding the savings effected by equipping Jordans with such bearings.



Courtesy: S. K. F. Industries, Inc

FIG. 1

Anti-Friction Jordan Engine Yields 95 Per Cent Return Annually on Investment—Flambeau Paper Co.

At the Flambeau Paper Company, Park Falls, Wisc., an unusually fine opportunity was provided of determining the economic worth of the anti-friction bearing equipped Jordan, for two such engines of almost identical design and capacity, one fully equipped with anti-friction bearings and the other with standard babbitt bearings, have been in use for the past two years or so. Both machines are operated under identical heads, power being supplied in each case by three-phase synchronous 150-horsepower motors run at 360 r.p.m. on a 440-volt, 60-cycle supply. Based upon carefully compiled and comparable records covering an operating period under customary mill conditions of eighteen months, the anti-friction bearing equipped Jordan showed a net annual saving of $759.78, besides possessing other operating advantages of a highly desirable nature in paper mill service.

Courtesy: S. K. F. Industries, Inc.

FIG. 2

Anti-Friction Bearing Equipped Line Shaft—Fitchburg Paper Co.

The largest single item of economy was, naturally, in the utilization of power, the anti-friction bearing machine showing a superiority of 17.1 per cent. This is equivalent to 10.4 kilowatt-hours per ton of paper, or 75,400 kilowatt-hours during a 290 day

SAVINGS EFFECTED ANNUALLY BY USE OF ANTI-FRICTION BEARING MOTORS

Lubrication		Maintenance and Repairs	Power	Floor Space	Savings	
Lubricant	Labor				Total	Per Motor
$48.00 (92.0%)	$75.00 (56.5%)	....	$683.52	$125.00	$931.52	$5.29
14.40 (75.0%)	95.63 (84.0%)	$300.00	295.94	.....	705.97	35.30
19.92 (92.0%)	74.88 (84.0%)	61.00 (75.0%)	.....	.....	155.97	25.97
419.10 (86.5%)	....	1,074.00 (95.0%)	.....	.....	1,493.10	....
66.00 (73.3%)	....	4,290.00	.....	.....	4,356.00	....
Average 83.8%	74.8%	85.0%				

SCHOPPER

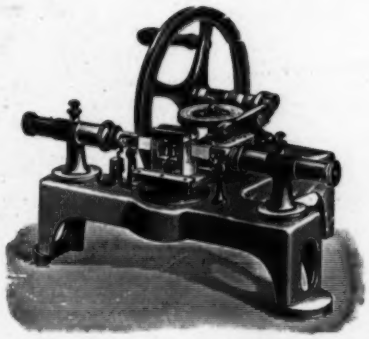
World Standard Paper Testers

All Kinds of Scales

Patented

Schopper-Riegler Beating Tester
Uniformity of beating means better paper.

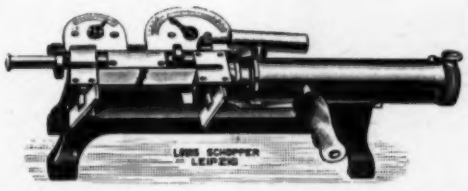
The Schopper Standard Desk Micrometer
Carried in stock—1/1000 of an inch for Boards, 1/2000 of an inch for Paper.



Schopper Folding Tester
The folding test has become standard for bonds, ledgers, and Kraft papers.

Schopper Strength and Stretch Tester

Small Piece Pocket Paper Scale
By weighing a piece 2 in. by 4 in., gives basis weight 25x38, 24x36, 22x34, 500 sheets.



Rapid Strength and Stretch Tester

FOREIGN PAPER MILLS, Inc.

Sole Agents

72 DUANE STREET, NEW YORK

Warehouses: NEW YORK—MONTREAL

Write for Booklet on Paper Testing Instruments P-100

working year, with an average daily production of 25 tons of paper. At the extremely low electric energy rate of 1 cent a kilowatt-hour, the economy in power consumption alone means a yearly saving of $754.00.

In the matters of lubrication and inspection, the anti-friction machine shows an annual saving of $71.47, lubrication and inspection expenses for this engine being only $3.35 a year, as against $74.82 for the Jordan with plain bearings. The latter machine also contracts an annual expense of $273.00 for filling and bearing repair, while for filling and chipping, the anti-friction bearing Jordan entails a yearly expense of only $173.33, a further net saving in favor of the anti-friction bearing machine of $99.67. Still another expense contracted by the babbitt bearing machine is for bearing cooling water, 8,084 gallons per day. No such cooling medium is required for the anti-friction bearings, so even at the very low rate for water of 1 cent per thousand gallons still another economy of $23.44 a year favors the refined Jordan engine.

The sum total of these itemized savings is a gross annual saving attributable to the anti-friction bearings of $48.59. Equipping the Jordan completely with anti-friction bearings entailed an expense of $800.00. Based upon only a five year engine life, fixed charges covering depreciation, interest on investment, etc., total to $188.80 per year, which, deducted from the gross annual saving, places the net annual saving effected by the anti-friction bearings at $759.78. This is a return on the investment of $800.00 of 95 per cent per year.

Records such as these would seem to indicate conclusively that Jordans equipped with anti-friction bearings prove excellent investments. There are also other operating advantages which in many mills might well be considered cheap at $800.00. There is absence of vibration, in the first place, which is so hard to avoid with a plain bearing machine. Then, there is a considerably wider range of adjustment, the setting-up of the machine to give a high degree of slowness being effected with far less danger of pulling the motor out of step or of stopping the machine, than with Jordans equipped

Courtesy: S. K. F. Industries, Inc.

FIG. 3

Paper Machine Equipped With Anti-Friction Bearings—Fitchburg Paper Co.

with plain bearings. This is particularly advantageous on an all-sulphite sheet which requires hard brushing, for the machine can be set-up much tighter and a higher tonnage realized. The fact that the plug in the fully anti-friction bearing equipped Jordan does not settle, permitting uniform and constant clearance between the plug and shell, also insures uniformity of output, one of the most important advantages of the anti-friction bearing machine.

The remarkably low consumption of power entailed in passing the sheet through the highly efficient type of modern vacuum paper machine dryer is traceable in no small measure to the refinements of anti-friction bearing constructions incorporated in such machines. To such also are to be attributed the high mechanical efficiency, long life and marked operating economies of other of the refined pulp and paper making apparatus now in use in the more progressive mills. These improvements are even now being accepted by the paper making industry as logical and quite natural developments, the furtherance of which are pretty well assured.

There are in addition, the anti-friction bearing applications to power plant and industrial equipment, to differentiate it from apparatus essentially for paper making, the initiative for which has

Courtesy: S. K. F. Industries, Inc.

FIG. 4

Anti-Friction Motors Driving Boiler Feed Pumps 75 Horsepower—1,800 R.P.M.

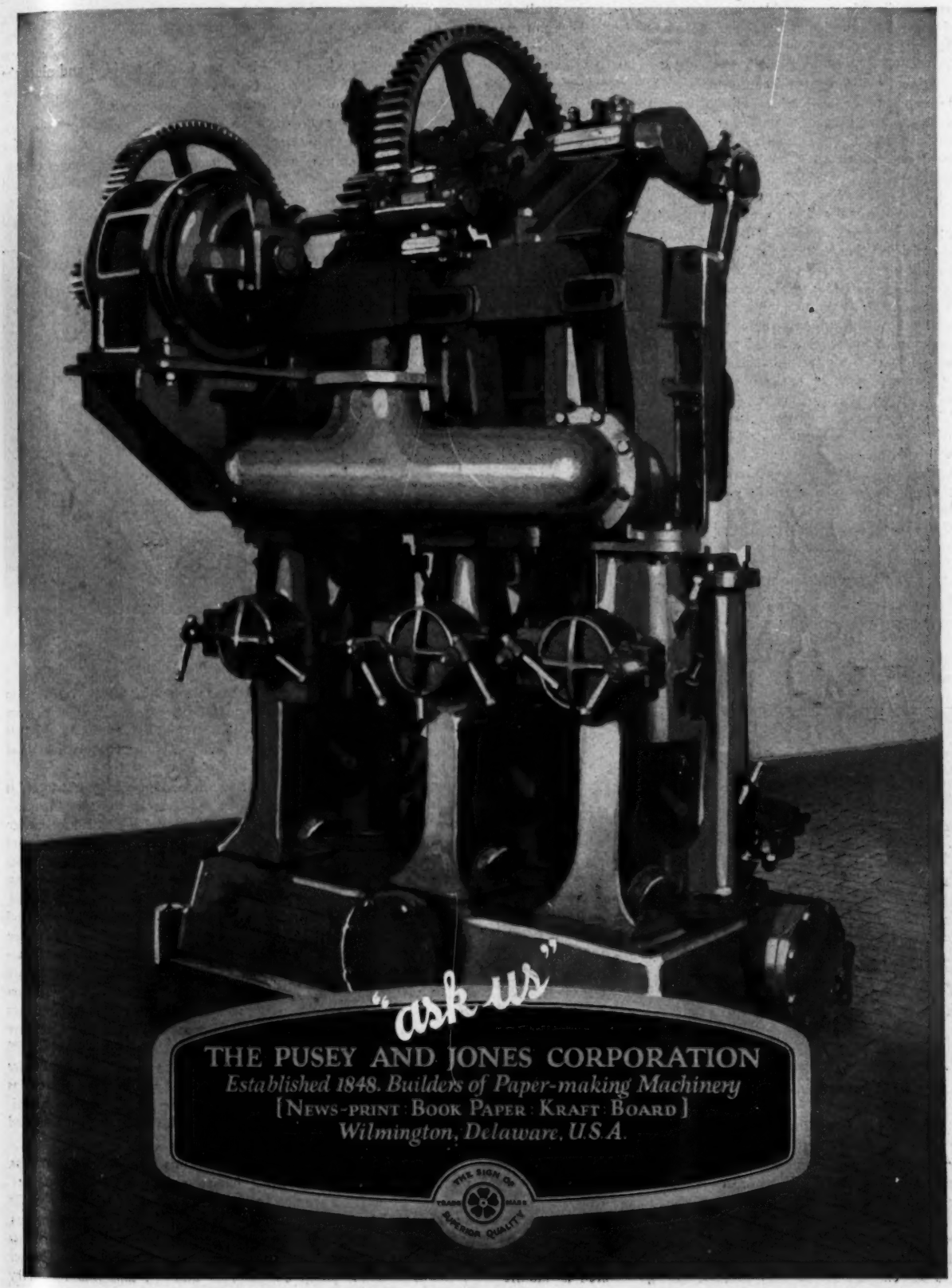
not had to be taken by the paper mill or solely by those equipment manufacturers who serve the paper industry. In other words, there are numerous anti-friction bearing applications to equipment common to, but not particular to, the machine complement of the paper mill and its power plant. Statistics demonstrating the economies which can be realized in the paper mill through the use of such equipment can then well be gathered from the experiences with such apparatus in other industries, provided the conditions under which the equipment has to function are not unlike those existing in the average paper making establishment.

The progressive paper mill is quick to benefit from the experience of other power consumers, whether they weave cloth, roll steel, work with wood, make tin cans, or what not, so it is quite pertinent to draw attention to anti-friction bearing dividends earned among such manufactories for indications of lines in which the modernizing of apparatus so actively carried on by the leading paper mills can be profitably directed. Paper mill equipment in service a matter of six or seven years, if not old, is older apparatus, demanding consideration for improvement in the up-to-date paper mill.

Anti-Friction Bearing Motors

Exemplifying these anti-friction bearing applications is the addition of these refinements to the already highly efficient electric motor. The use of anti-friction bearing motors is far from being unknown in pulp and paper mills, it is true, Price Brothers and Company, Ltd., alone employing a good many hundred such motors in their mills at Kenogami and Riverbend, to very decided advantage, but just how extensive are the economies realized and the advantages accruing to the use of such motors is not so well appreciated.

Some idea of what the economies realized are may be gathered from the accompanying table, presenting statistics from quite extensive anti-friction bearing motor installations in five progressive establishments, where operating conditions are quite similar to those which pertain in the average paper mill plant. The records


"ask us"
THE PUSEY AND JONES CORPORATION
Established 1848. Builders of Paper-making Machinery
[NEWS-PRINT BOOK PAPER KRAFT BOARD]
Wilmington, Delaware, U.S.A.
THE SIGN OF TRADE MARK SUPERIOR QUALITY

The Puseyjones Stuff Pump illustrated above is one of eight recently installed in one of America's great paper mills (name on application).

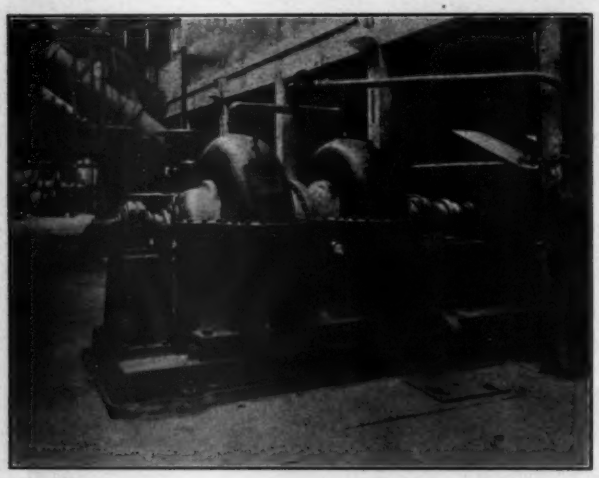
Coprighted 1927 by The Pusey and Jones Corporation, Wilmington, Delaware, U. S. A.

are not directly comparable, covering in some cases installations of several hundred motors of various size and in others not more than a score or so, and the items listed for the respective cases are the economies on which the operating departments of the individual enterprises laid chief stress. The percentages following the items under lubrication and maintenance and repair expenses, however, are the proportional savings effected for these items, as compared with similar expenses for motors with plain or oil-ring bearings, and as such may be taken as of average and typical weight.

While lubrication expenses in connection with motors are not ordinarily considered of any great moment, cutting the annual cost of lubricants between 80 and 90 per cent and of lubricating labor 75 per cent will go far toward covering in the first year the slightly greater cost of anti-friction bearing motors or of the expense of equipping plain bearing motors with such refinements. However, the benefits of minimizing the consumption of lubricants are far from being confined to the relatively trivial monetary saving, even including that saved in lubricating service, but are much more far reaching and influential.

Commenting upon the lubrication characteristics of anti-friction bearing motors, N. D. Paine, General Electrical Superintendent of Price Brothers and Company, claims that the greatest benefit lies in keeping oil from getting on the windings of the motors, with the resultant deterioration of insulation, particularly in closed slot motors. He also expresses the opinion that the motor lubrication is much more reliable if the proper grease is applied and that there is far less liability of trouble. There are no rings to jump off the motor shaft and if a grease cup happens to break from the housing, the lubricant will not leak out as in the case where oil is used.

The not infrequent trouble of oil getting on the commutators of direct current motors, causing poor commutation and short brush life, is also avoided with anti-friction bearing motors. The avoidance of even slight bearing wear also adds its quota to the assets of the anti-friction bearing equipped motor. With no appreciable wear, the air gap between the rotor and stator remains



Courtesy: S. K. F. Industries, Inc.

FIG. 5

Circulating Pump Units. Both Motors and Pumps Equipped With Anti-Friction Bearings.

constant and avoids an otherwise unpreventable reduction in power factor. In one establishment, using similar motors made by the same manufacturer, an acreage power factor difference of 2 or 3 per cent has been noted in favor of the units with anti-friction bearings.

The lubrication characteristics of anti-friction bearing motors are also reflected in the very marked savings effected in maintenance and repairs of motors, for one of the most prevalent causes of motor failures is unquestionably due to oil soaking of the windings. One extensive user of both anti-friction and plain bearing motors estimates that the provision of anti-friction bearings increase the motor life between necessary overhaulings by at least 50 per cent. Repairs of all kinds are largely avoided and since the motors run much cooler than plain or oil-ring bearing motors, the dangers of burn outs are reduced to a minimum.

In spite of the inherently high mechanical efficiency of the electric motors, the refinement of equipping them with anti-friction bearings effects a very considerable saving in power consumption. The friction load is quite noticeably less, being in the case of ball bearings from 66 to 75 per cent less and for roller bearings 25 to 33 per cent less. The motors run cooler, minimizing thermal

Courtesy: S. K. F. Industries, Inc.

FIG. 6

Anti-Friction Bearing Stoker Drive.

losses, and start much easier. These advantages are reflected in monetary savings which quite materially overshadow any other specific economies, with the possibility of an exception in the case of the elusive and quite intangible value to be placed upon increased insurance against interruptions in operation.

One other advantage of anti-friction bearing equipped motors is the fact that such motors are quite appreciably shorter than similar motors with plain bearings. This may be a decided advantage under certain circumstances. A case in point is in a certain plant where a 30-inch centrifugal pump had to be provided with two motors in very cramped quarters. The space available could not much more than accommodate the pump and a single plain bearing motor, still two anti-friction bearing motors were installed and required only 6 inches of additional room. Where only a few motors are in question, this advantage of conserving floor space may not carry much weight, but where several hundred motors are employed the case may be very different. In the first installation of anti-friction bearing motors listed in the table of savings effected, a hundred and sixty-seven motors of various sizes are entailed, saving in the aggregate floor space amounting to 500 square feet. This space is valued at 25 cents a year per square foot, $125.00 annually, and is considered by the establishment as being worth even more than the savings the motors effect in lubrication costs, including expenses avoided for both lubricants and lubricating labor.

The application of anti-friction bearings to centrifugal pumps, particularly to care for thrust loads vertical units and on horizontal split suction pumps, also effects very well worth while economies. The pumps avoid any production losses, often serious, occasioned by the necessity of rebabbitting plain bearings, are less costly from the maintenance angle and are considerably longer lived. Maximum pump efficiency is attained and maintained by virtue of securing correct and constant centralization of impellers, bearing wear being virtually eliminated.

The Mason Damper Regulator meets the conditions in the average power plant where accurate regulation of the boiler pressure is desired. It works on a variation of less than a pound in boiler pressure and regulates the flue damper to secure the proper draft for complete combustion. Easily installed, requires no attention and is moderate in price.

We shall be glad to send you a new, illustrated folder giving the complete description and prices of the Mason Hydraulic Damper Regulator, or a copy of Catalog No. 62 which describes the entire line of Mason Regulators for pressure control.

Mason Regulator Co. of Canada, Ltd.
314 Notre Dame Street West, Montreal

San Francisco office: 606 Howard Street

1644

Mason Regulators
MASON REGULATOR CO.
Boston, Mass.

Anti-friction bearing centrifugal pumps are particularly efficacious on high pressure service, functioning with admirable efficiency against pressures in excess of 600-foot head. They are also essentially adapted to high speed service. Customarily, they also conserve upward of 5 per cent of the power required to operate similar centrifugals equipped with plain bearings. Lastly, these various advantages are to be secured at no additional pump cost and with decided reduction in pump operating cost.

No increase in cost of pumps is explained by the fact that the pump shafts of anti-friction bearing centrifugals are shorter than the necessary shafts when employing plain bearings and the pump design can be simplified. Reductions in pump manufacturing costs are thus secured which just about offset the increase in the item of journal cost. Furthermore, a centrifugal pump with plain bearings can be equipped with anti-friction bearings at such small expense that the resulting saving in power of 5 per cent or more quickly amortizes the investment entailed. In fact, one pump manufacturer who formerly built centrifugal pumps with plain bearings and now also builds such pumps equipped with anti-friction bearings states that about 10 per cent of the users of his older type pumps have found it profitable to purchase and install replacement brackets with anti-friction bearings, modernizing their pump equipment in this way to secure the benefits of the less expensive and better pump operation.

Applications to Fans

The virtual elimination of wear and of the dangers of hot boxes characteristic of anti-friction bearings also makes their application to fans of all varieties highly desirable. As compared with fans equipped with plain bearings, there is a saving of as much as 95 per cent in lubricant expense and the avoidance of oil leakage and drippage reduces the fire hazard, which may be an important consideration in many fan service applications. In other instances, the avoidance of oil drips eliminates the annoyance of the trivial, but troublesome, expenses incident to the shortened fan belt life of oil soaked transmitting bands. The virtual elimination of all journal wear in direct current motor driven fans when anti-friction bearings are provided serves to retain the balance of the brushes for longer periods, with corresponding increase in brush life.

These relatively minor economies in the aggregate amount to sums which well justify the somewhat higher cost of fans equipped with anti-friction bearings. In fact, the savings effected in power consumption, due to reduced frictional load and materially lower starting load, and those in lubrication costs, quickly offset any increased investment burden and make the use of the fans quite profitable. This is well demonstrated by statistical records governing the performance of a 36-horsepower duplex exhaust fan which was first operated with the pump shaft running in ordinary babbitted bearings and later in anti-friction bearings.

The effect of this refinement, which was instigated largely by the fact that the babbitted bearings required close observation and very frequent oiling to guard against the bearings running hot, was a cut in lubricating costs of 91 per cent and a reduction in power consumption of 14 per cent. In analyzing the monetary aspects of this betterment, it is only necessary to take into account the costs, fixed and operating, of the two varieties of bearings, for only such details were changed. The anti-friction pillow blocks cost $50.00 and the value of the plain babbitted bearings a matter of $22.00.

Figuring depreciation on a ten year basis in both cases, interest at customary rates, making suitable allowances for maintenance and repairs and taking proper account of lubricating costs, the total annual operating costs of the two sets of bearings were $10.42 for the plain bearings and $8.28 for the anti-friction blocks. The much greater annual lubricating cost of the plain bearings made the actual annual cost of the anti-friction journals the cheaper by some 21 per cent. This, however, was only a minor economy, for during the year the more efficient bearings effected a saving in power consumption of 9,399.6 kilowatt-hours. Valued at 3½ cents a kilowatt-hour, the rate effective at the establishment, this means a yearly saving in power of $328.99. Adding this to the annual operating cost balance favoring the anti-friction bearings, $2.14, makes a total saving per year of $331.13, an annual yield on the investment entailed, $50.00, of 660 per cent.

Reductions in Coal Handling Costs

Anti-friction bearing applications to the arduous duties imposed upon coal handling equipment are also apt to present quite surprisingly profitable opportunities of effecting substantial savings in power and upkeep expenses. In one large plant, operating on a 24-hour basis, where any interruption to the fuel supply would precipitate much the same catastrophe which would result from such mishap to one of the large paper mills, the coal handling system consists of various belt conveyors and an ash skip-hoist rig, the main shafts of all of which run in anti-friction pillow block bearings, greased once a year, of from 2 7/16 to 3 7/16 inch size. There are seventy-two such bearings in all, which cost a few hundred dollars, yet their use, in preference to plain bearing pillow blocks, effects an annual saving of some $4,141.00.

This very substantial saving is made up of the following annual items—

Saving in power (87,600 kwh. at ¾c)	$ 657.00	
Saving in bearing renewals (material and labor) 3 repairs × 72 bearings × $8.00	1,728.00	
Saving in upkeep labor 5 hours × $0.60 × 365	1,095.00	
Saving in lubricant	511.00	
Saving in repairs, maintenance and cable renewals for ash skip-hoist	150.00	
		$4,141.00

$11,607.00 Saving in Annual Stoking Costs

Another of the heavy duty and exacting services for which anti-friction bearings are apparently proving remarkably profitable investments is in the support of the shafting driving extensive systems of automatic stokers. In the same plant profiting so handsomely from the application of anti-friction bearings to its extensive coal and ash handling system, fourteen automatic stokers on either side of the boiler aisle serve a battery of twenty-eight 600 horsepower boilers. The total number of pillow blocks employed to support the shafting driving this comprehensive system of stokers totals to a hundred and thirty-nine of 2 3/16 and 2 7/16 inch size. Originally, they were of the ring oiling babbitted type, but some years ago they were changed over to anti-friction bearings with the effect of reducing the average power consumption of the fourteen stoker engines by 6 horsepower per engine, realizing a conservation of power valued at $5,058.90 a year.

In addition, the following operating and upkeep annual expense savings are effected—

Saving in bearing renewals (material and labor) 3 repairs × 139 bearings × $8.00	$3,336.00	
Saving in upkeep labor 10 hours × $0.60 × 365	2,190.00	
Saving in lubricant	1,022.00	
		$6,548.00
Saving in power		5,058.90
Total annual savings		$11,606.90

These few examples of substantial savings effected through the proper application of anti-friction journals to power transmitting shafts simply indicate ways and means by which power costs in the paper mill can be materially reduced. This unit treatment goes far to promote the most efficient and economical distribution of power. Elsewhere in the power plant and in the mill, as well, will be found other opportunities of modernizing mill operation and saving considerable money. The way is open for the large mill and the small. Much money is to be made in reducing power costs through unit treatment.

B. M. Thomas Goes With Container Corp.

CARTHAGE, Ind., March 5, 1928.—Benjamin M. Thomas, who has been vice president of Dixon Board Mills Incorporated in charge of the Carthage, Ind., mill, is leaving that company to take the position of mill manager of the Philadelphia (Manayunk) plant of the Container Corporation of America.

C-H (*Harland*) Paper Machine Drive

Two 230-inch newsprint machines equipped with C-H (Harland) Drive—in the plant of the Belgo Canadian Paper Co., Shawinigan Falls, Que.

Higher speeds—
fewer breaks on newsprint machines

On newsprint machines, where speed is essential, breaks are apt to be frequent and costly. By materially reducing such losses, C-H (Harland) Sectional Interlock Drive has earned wide recognition.

By keeping all sections of the machine in exact synchronism, the C-H (Harland) Sectional Interlock Drive provides a draw so steady that vibration and weak spots are practically eliminated.

Such protection against breaks makes higher speeds possible on all types of machines which include this most modern drive. Its simplicity also recommends its wide use, for paper mill electricians anywhere can master the operation of the C-H Harland Drive in twenty minutes.

"The Heart of the C-H (Harland) Drive"
Notice the simple design of the C-H Differential Regulator. One of these regulators on each section of the machine assures perfectly synchronous speed throughout, and remarkable flexibility of speed control.

Every paper mill executive should have the complete story of this simple, efficient drive. Write for particulars today.

The CUTLER-HAMMER Mfg. Co.
Pioneer Manufacturers of Electric Control Apparatus
1274 St. Paul Avenue, Milwaukee, Wis.

CUTLER HAMMER

The Control Equipment Good Electric Motors Deserve

New York Trade Jottings

Col. C. H. L. Jones, vice-president of the Spanish River Pulp and Paper Mills, Ltd., Sault Ste. Marie, Ontario, Canada, spent several days in New York last week in the interest of his organization.

* * *

Continental Bag and Paper Mills Corporation and subsidiaries for the year ended December 31, 1927, showed net loss of $535,689 after interest, depreciation, etc., against net loss of $1,358,300 in 1926.

* * *

The regular weekly luncheon and meeting of the New York Division of the Salesmen's Association of the Paper Industry was held at the Canadian Club last Monday and attracted a good attendance. Matters of vital interest to the members were freely discussed.

* * *

The Great Atlantic Paper Company, distributors and converters of paper, are now installed in their new quarters at 77-81 Wooster street, New York, where they are equipped to give the trade unsurpassed service from their enormous stock on hand. Jack Galewitz is the manager of sales.

* * *

United Wall Paper Factories, Inc., has paid an initial dividend on the preferred shares, covering ten months' period from its organization. This stock carries $7 cumulative dividend, present payments being $5.83 1/3 on 37,000 shares outstanding. Semi-annual dividend of $3 on prior preferred shares also was paid on 7,000 shares outstanding.

* * *

The report of Worthington Pump and Machinery Corporation and its subsidiaries for the year ended December 31, 1927, shows net income of $600,343 after depreciation, etc., equivalent to $3.77 a share earned on combined 159,145 shares of Class A and Class B preferred stocks. This compared with $365,663 or $2.29 a share on combined preferred stocks in 1926.

* * *

The Aldine Paper Mills, Inc., paper distributors, of 333-339 Hudson street, New York, announce that they have added to their sales staff, A. H. Quartner, formerly with the Keith Paper Products Company, and Otto S. Mayer. Mr. Quartner has been selling paper for several years, and is well known among the New York printers. Mr. Mayer, practically a newcomer in the paper industry, has a host of friends amongst the printing trade of New York.

* * *

The Chase Securities Corporation, head of the committee representing holders of the Continental Paper and Bag Corporation first and refunding 6½ per cent twenty-year sinking fund gold bonds, series "A," announced recently that the offer of exchange of those securities for International Paper Company 7 per cent cumulative preferred stock has been declared effective. International Paper, however, has extended the offer to and including March 15 for the benefit of holders who have not yet deposited their bonds. The new stock will be isued on or before March 31, 1928. Under the terms of the offer International Paper Company agrees to exchange 8¼ shares of its preferred stock for each $1,000 Continental Paper and Bag Mills Corporation bond, with all coupons maturing after August 1, 1927, attached, and to make an appropriate dividend adjustment in cash so that bondholders receive an amount equal to dividends at the rate of 7 per cent on their interest in the shares deliverable under the offer accrued from August 1, 1927.

Post Office Department Paper Bids

WASHINGTON, D. C., March 7, 1928—The Post Office Department will receive bids on April 3 for the annual supply for the Department of cards, printed facing slips, tags, and various paper items for the fiscal year beginning July 1.

Among some of the items on which the Department is asking bids are the following:

90,000 rolls white computing machine paper.
900 dozen transparent adhesive tape paper.
12,000 dozen 3½ x 8 white paper tablets.
200 rolls Bundy time recorder tape paper.
100,000 sheets black light weight carbon paper.
2,051,000 sheets medium black carbon paper.
1,665,000 sheets heavy weight black carbon paper.
671,000 sheets carbonized on both sides medium black carbon paper.
9,000,000, 3-3/16 x 5 facing slips.
1,000,000, 4 x 7½ manila tagboard cards.
2,046,000 plain white index bristol cards.
2,500,000, 3-⅜ x 1-15/16 blank examination cards.
1,530,000, white index bristol cards.
300,000 manila tags.
425,000 various sizes blank guide cards.
1,500,000 colored manila tagboard tags.
42,000 pressboard guide cards.
1,000,000 perishable parcel post tags.
170,000 plain manila folders.
300,000 parcel post tags.
4,300 sets alphabetical index sheets.
1,800,000 manila tags, various sizes.
120,000 pieces news board, chip board or strawboard.
65,000 white linen tags.
140,000 pounds buff blotting paper.
4,000,000 green tagboard tags.
210,000 rolls tissue toilet paper.

News of the Boston Paper Trade

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., March 5, 1928.—The Carter Rice & Co. Corp. is sending out printed specimens of Oxford Papers in order to create a background for sales of these lines, for which this firm is the New England agent. These papers were formerly sold by the Oxford Paper Company, whose mill is at Rumford, Me., direct to publishers, for the greater part, but a certain number of jobbers are now handling them. The mill has a capacity of 400 tons daily. On the samples being issued the aim is to present an unusual effect in typography and process color. It is claimed that the use of Oxford papers, on which are printed 176 magazines, makes for character and economy, and that their uniformity keeps the cost of press runs to the minimum. Oxford has also furnished the paper used in de luxe editions. The lines include Oxford English Finish Book, Oxford Super Calendered Book, Oxford North Star Coated, Oxford Dull Finih Coated, Oxford Folding Coated, Oxford Polar Coated, Oxford Lithograph, and Oxford Tablet.

The Stone & Andrew Company has been appointed New England distributor for Graybeco Clasp Envelopes, and is carrying a stock of all sizes in Boston. They are made by the Buffalo (N. Y.) Envelope Company. The Stone & Andrew Company is issuing new and attractive folders of the Campania Line.

It is expected that the United Paper Board Company, Inc., will resume operations in the Benton Falls (Me.) Mill in the very near future. The mill has been closed for the last two months on account of repairs. This company reports a good business in the New England territory.

The bi-monthly meeting of the New England Paper Merchants Association is to be held at the Harvard Club of Boston Thursday evening and a meeting of the Fine Paper Division of the organization at the Boston Chamber of Commerce Tuesday.

THE
GUMMED PRODUCTS CO.
TROY, OHIO

Offers

A Real Merchandising Policy

On

Gummed Paper and Cloth

enhanced by these five important features of service:

1. Fifteen years of close co-operation with Paper Merchants in furnishing *Private Branded Products.*

2. Modern plant and appurtenances for manufacturing economically a complete line of commodities and specialties in the field of gumming.

3. Located in the Miami Valley, a natural source of Paper.

4. Private siding connecting on three railroad lines, frequent carload shipments to principal cities.

5. An experienced organization and personnel, which includes among its administrative and factory forces, several men who have devoted more than 20 years to the Gumming Industry.

"READY, WILLING, AND ANXIOUS TO SERVE YOU."

THE GUMMED PRODUCTS CO.
TROY, OHIO

PAPER TRADE JOURNAL
ESTABLISHED 1872

Henry J. Berger
Editor

Ronald G. Macdonald
Editor Technical Section

Herbert J. Laughton
Assistant Editor

Thomas J. Burke, C. A.
Editor Cost Section

Reginald Trautschold, M. E.
Power Engineering Consultant

Member A. B. C. Audit Bureau of Circulations

Vol. LXXXVI New York March 8, 1928 No. 10

PROBLEMS OF THE PAPER INDUSTRY

Mr. Paul S. Hanway, who for a number of years did notable work for the industry as statistician of the American Paper and Pulp Association and who has recently been appointed secretary of the American Waxed Paper Association, believes that the chief problem of the pulp and paper industry might be easily solved if it were possible to apply the principle of the right of eminent domain, namely, "that private interests may not be allowed to obstruct the interests of the whole."

Our laws, however, differentiate between the processes of running a government and those processes which govern business.

The consumer is carefully and tenaciously protected while the producer is left to take care of himself as best he may so long as he does not controvert the laws which protect the consumer.

The result has been the development of an uneconomic overcapacity in practically every industry and has made the consumer largely a dictator of what he shall pay due to the attempt by industry to create fictitious consumption during lean periods of business.

This evil, however, has had its favorable side. Overcapacity, hand to mouth buying and other resultant developments have of themselves created the spur to inventive genius and efficiency and results to the progressive in industry have not proved entirely unsatisfactory. And while the value and utility of manufactured products have been increasing, the cost to the consumer has been decreasing because of improved methods, machinery, etc.

Wages, meantime, have been at the peak and employment has remained at high levels. Prosperity, in the common usage of the term, has advanced and will continue to advance.

Thus, the issue in any industry cannot be solved by throwing stones at the consumer but rather by a cold, business-like analysis of its methods of dealing with the consumer and of its methods of production.

At present, because of the lack of a central research and of a centralized information bureau for the entire industry we find the pulp and paper industry running rampant.

The low cost producer with correspondingly low prices may be reaping a larger actual net profit than a high cost producer who demands higher prices.

There can be no artificial adjustment for such a situation. The established practices are those which emanate from profitable trials or attempts to better the situation, and when such new ideas, inventions, etc., prove profitable, they are here to stay. It is not the problem of the industry to meet and maintain the higher selling prices—this is both uneconomic and illegal.

It is, however, the problem of the high cost producer to learn wherein he is failing and to make the necessary adjustments upon an economically sound basis to meet the new competition. Only by an honest and open exchange of facts can this be done.

But can it be done in the paper industry? Not under the present scheme of affairs. The industry is neither sufficiently nor adhesively organized. And therein lies its big problem.

Waste, lack of proper cost accounting and of standard accountancy methods, of proper credit exchange, of proper statistics, etc., mean a loss running into the millions of dollars annually.

The industry needs better organization, more advertising, more field men to preach efficiency in operation and methods. It needs a research bureau to help develop its distributive trends and to align them according to economic and fundamental facts.

There exists today a real issue for the pulp and paper industry.

Tie up pulp and paper stock with the paper body stock production.

Analyze the group needs for raw materials and cultivate more efficient buying.

Know the actual situation, month to month, for the whole paper industry just as the financial group know each month, accurately and in refinement, as to bank clearings, deposits, loans, new security issues, etc.

The business of finance is profitable because it knows each week just where it stands and where it is heading.

The pulp and paper industry might profitably copy from or imitate the business of finance in cleaning up its own house.

Never was there a period when the pulp and paper industry could so profitably get together as a unit of understanding and cooperation than at the present time.

The future of consolidations is not distant, it is in process now.

The "cooperators" will advance—and the "lone wolf" will be left, largely, to develop and promote his own salvation.

INVESTIGATION MEANS PROGRESS

"A task worth doing at all is worth doing well," is an old adage that is responsible, to some extent, in bringing agriculture to its present stage of intensive application. The New York State College of Forestry claims that the same rule applies in the practice of forestry.

While America has looked to Europe for guidance in forestry methods, nevertheless, there is much that cannot be applied to our American forests because of the difference in the climate, species of trees and soil conditions. The American social and economic fabric also calls for a different treatment of our forests.

The old method of trial and error has given way to the more modern methods of systematic research. It has been proven that careful investigation extending over a period of years is the cheapest and the most effective means of revealing the secrets and mysteries of crop production. Comprehensive in-

vestigation is the quickest way of removing the expensive handicaps that often impose themselves upon timber growth and already have cost this country untold sums through the destruction of large portions of our forests.

At present Congress is giving serious consideration to a measure, which has as its purpose the formulation of a program of fundamental research. If adopted, a great step forward will be made in providing continuity in forest research. Proper utilization and protection of the forest crops of this country is possible if adequate essential data are available.

Merger Rumors on Pacific Coast

PORTLAND, Ore., March 3, 1928.—In Los Angeles at least, credence is placed in reports that a merger of Crown Willamette Paper Company and Zellerbach Corporation, the coast's leading paper manufacturing corporations, is under consideration, says the *Portland Oregonian*. San Francisco financial writers quite consistently have rejected the merger theory to account for remarkable strength of shares of the corporation, explaining that a pool has been operating to boost the stocks. Earle E. Crowe, financial editor, writes in the *Los Angeles Times*:

"After having been abandoned at one time in the last few days, merger negotiations in the Pacific Coast paper industry have proceeded smoothly since resumption, it is understood, and the chances now are much better for success. Discussions do not include International Paper, largest manufacturer in the industry, but are confined to proposals of a union between Crown Willamette and Zellerbach, the two large Pacific Coast companies.

"Actuating the discussions, which are sponsored by bankers interested in the two companies, is the belief that a consolidation under one management will permit important economies. Studies by efficiency experts are reported to have revealed the possibility of saving rather large sums annually through the elimination of duplicated effort in several instances; by conserving raw material resources, and through more effective selling policies.

"Plans for the consolidation, according to the latest information, involve the purchase of controlling interest in Crown Willamette by the Zellerbach interests, and the operation of the two companies under the Zellerbach management. What price has been fixed on Crown Willamette control is conjectural, but the movement of the stock market seems to indicate a figure ranging from $20 to $25 a share. Crown Willamette sold here yesterday at 18¼, an improvement of about 1 point."

U. S. Envelope Co. Has Good Year

BOSTON, Mass., March 5, 1928.—In the light of competitive conditions earnings of $28.55 a common share reported by United States Envelope Company for 1927 attest the soundness of this New England-managed enterprise, says the Boston News Bureau. Although plants and activities are scattered from coast to coast, management is located in Worcester and Springfield. Ever since it began business in 1898 as a consolidated company, United States Envelope has been prosperous. There was but one exception, in 1921, when inventory deflation exceeded operating profits.

Currently the company's plants are operating nights turning out envelopes and other papeteries. The company was recently awarded contract to supply the Government with about 29,450,000 envelopes during the fiscal year beginning July 1, 1928.

Since 1920, including a stock dividend of $250,000, the common has received $1,465,000 in dividends—this exclusive of the $4 per share "extra" recently declared.

Position of the company is steadily improving, due to constant whittling down of funded debt. At the close of 1927 there remained outstanding only $950,000 first mortgage bonds of an original issue of $2,500,000. For two years more retirements continue at rate of $100,000 annually, then they increase to $150,000. Directors could with good reason do something in the nature of a stock dividend.

Paper Mill Workers Request Higher Wages

ALBANY, N. Y., March 5, 1928.—The International Brotherhood of Pulp, Sulphite and Paper Mill Workers will this spring ask for a 45 cent an hour minimum wage in the paper making industry for members of their organization. A resolution to that effect was adopted in this city at a wage scale conference attended by about fifty delegates and officers of the organization. The entire board of the union was present at the sessions, which continued for an entire day.

Much of the discussion centered on the wages being paid in paper mills in the United States and Canada to a certain class of men who are members of the union and who are drawing the lowest rate of compensation. At the present time this minimum wage per hour in the union is 40 cents, although several of the mills are paying 45 cents an hour. There are quite a number of mills in this country, however, that are operating at the present time on a four or five day week schedule. This means that many men are not drawing over $14 or $15 a week, making it almost impossible for them to meet living expenses. It is said that about 3,000 men in the union will be affected by the resolution which has been adopted. J. P. Burke, of Fort Edward, president of the union, presided at the sessions.

There were present at the meeting Douglas Chant, of the Spanish River Paper Company, and J. E. Patterson, general manager of the Abitibi Paper Company, of Iroquois Falls, Ont. Both men were present at the afternoon session and spoke at considerable length outlining business conditions in the news print end as they exist in both Canada and the United States. They said that competition was severe at the present time and probably would be for the next two or three years, due to the construction and opening of so many new mills. These two representatives of the manufacturers asked that these things be given consideration by the union representatives in any action that might be taken toward seeking a higher rate of wages. There were quite a number of Canadian locals represented at the meeting, including Sault Ste. Marie, Espanola, Three Rivers, Sturgeon Falls, Port Arthur and Kenora, while Northern New York was also well represented.

Parsons Paper Co. 75 Years Old

HOLYOKE, Mass., March 5, 1928.—Edward P. Bagg, treasurer of the Parsons Paper Co., has sent out the following announcement:

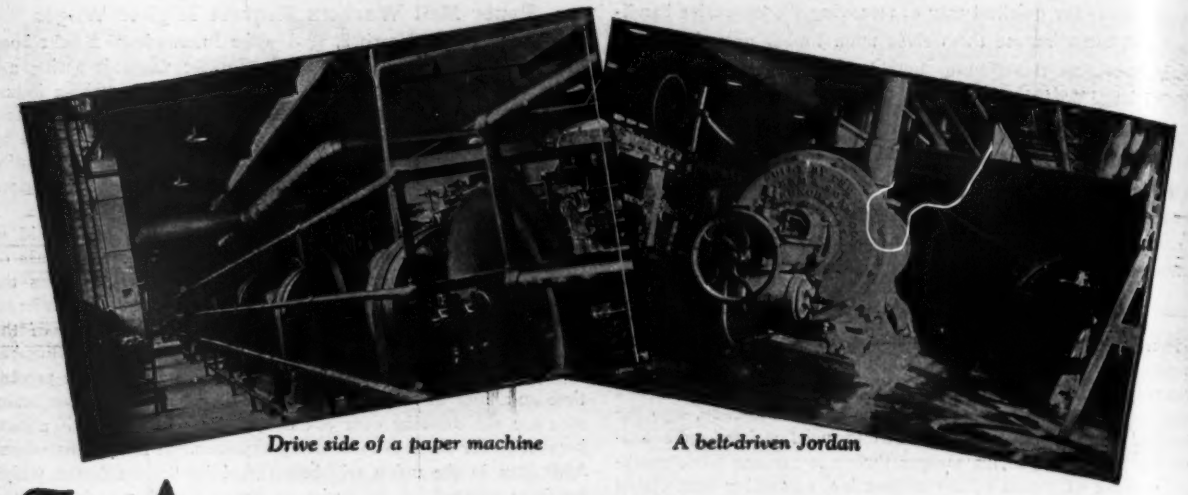
"The Parsons Paper Company of Holyoke, Mass., was organized in 1853 with the intention of establishing an institution whose product would merit high regard, whose principles would stimulate confidence, and whose policies would develop lasting friendships.

"Guided by these ideals, this company has steadily grown for seventy-five years; our friends have increased manyfold and our products have come to be recognized as standard wherever paper is used or sold.

"With a realization of the responsibility imposed by our traditions, we celebrate this year our diamond anniversary. Upon this occasion it gives us pleasure to express to you our appreciation of your confidence and friendship and also to renew our devotion to the principles that have gained them for us."

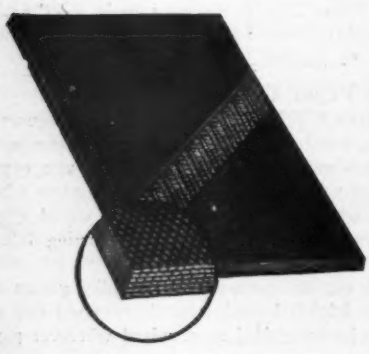
Paper Mill Worker Dies From Injuries

OGDENSBURG, N. Y., March 5, 1928.—John Garso, 55 years of age, and an old employee of the Algonquin Pulp and Paper Company, died here as the result of injuries suffered at the mill. Mr. Garso was yard superintendent at the Algonquin mill and in some unaccountable manner fell from a conveyor, fracturing his skull. He never regained consciousness after the accident. He was a native of Canada but had been a resident of Ogdensburg for 32 years. He was employed by the Algonquin Pulp and Paper Company in various capacities during his many years of service with the firm and for several years had charge of yard operations. The survivors include his wife and three daughters.



Drive side of a paper machine *A belt-driven Jordan*

For ALL Paper Mill Drives *The* Belt is "1788 Highflex"!



Send for bulletin 9700: a manual for paper makers on paper mill rolls.

COMBINING maximum strength with minimum thickness, "1788 Highflex" will carry loads over relatively small pulleys.

The friction rubber in this wonderful belt has all the "nerve" and snap of the finest plantation rubber, combined with certain ingredients which enable it to retain this life and elasticity in spite of age and heat. Its elastic quality gives extreme flexibility and pulley-grip.

All excess stretch is removed in manufacture, thus preventing frequent take-ups. The compact, dense weave of the duck gives a strong anchorage for hooks and lacings.

There are no seams on either side. The Foldless Edge prevents bootlegging; insures great flexibility, perfectly straight running and uniform strength.

Try "1788 Highflex" on your hardest drives!

THE B. F. GOODRICH RUBBER COMPANY
Established 1870 Akron, Ohio

Goodrich
"1788 Highflex" Belt

Section of the
Technical Association of the Pulp and Paper Industry

AN ORGANIZATION FOR THE ENCOURAGEMENT OF ORIGINAL INVESTIGATION AND RESEARCH WORK IN MILL ENGINEERING AND THE CHEMISTRY OF PAPER, CELLULOSE AND PAPER-MAKING FIBERS GENERALLY; IT AIMS TO PROVIDE MEANS FOR THE INTERCHANGE OF IDEAS AMONG ITS MEMBERS IN ORDER THAT PROCESSES OF MANUFACTURE MAY BE MADE MORE EFFICIENT AND IMPROVED ALONG TECHNICAL LINES.

Edited by
RONALD G. MACDONALD, Secretary

Wood Measurement*

By Ellwood Wilson, R. W. Sterns, J. G. Maclaurin, P. J. Murer

General Summary

1. The requirement for the ideal unit is that it be adaptable to practical methods for the measurement of all the pulpwood in a log or tree.

2. Obviously, to give a figure for all the wood, the unit must be in terms of solid wood—volume or weight.

3. "Feet board measure" and the "cord" are not units that enable a reliable determination of solid wood to be made; in addition, they are impractical for use at the mill.

4. The "cubic foot" is a definite and correct volumetric unit, and, moreover, it is more adaptable to use than any other measure. It is recommended that the Association adopt it as their standard unit for pulpwood measurement.

5. "Weight" in terms of pounds of bone-dry wood is also correct, and, in many cases, very convenient to apply. While the Committee considers that a volumetric measurement is superior to anything else, we realize that there are and will be cases where weight suits local conditions to much better advantage. Under such circumstances, we would recommend its use.

6. The use of these two units makes it very desirable that a practical method be found for converting from weight to its equivalent volume by computation. From an extensive investigation, your Committee conclude that such a conversion can be done. They have found that the average weight of wood per unit volume of a large and representative quantity, is practically a constant; also, that there is little likelihood of the constant changing appreciably from year to year; and that the "green" or "bush" volume of the wood is still retained in the block pile—with the exception possibly of a few individual blocks.

7. Therefore, if a cubic foot measurement be made at the mill, the equivalent weight of wood contained therein may be determined by computation. Similarly, if at the mill the wood is weighed, its equivalent green volume may be computed.

Units of Measurements

The units in general use by our Industry are Feet Board Measure, Cord, Cubic Foot, and to a limited extent, Weight, the last for the weighing of chips going into the mill. The methods of applying these units vary considerably, and there is also wide divergence in the factory used when converting from one unit to the other. The measurement of wood—wood is by far the largest item in our raw material costs—has in the past received very little organized study, unlike coal, sulphur, etc., which are carefully measured and analyzed. True and correct knowledge of quantities will tend towards economy in the use of wood, and the importance of this is indicated by Fig. 1, which shows the tremendous yearly increase in consumption.

The ideal unit for our Industry must be one that will give a correct measure of all the wood in a log, and, at the same time, be adaptable to the varying conditions to be met with in actual use. Obviously, therefore, the standards by which a unit must be judged are: whether or not it gives the actual volume, or weight, of wood in a log; and whether it is suitable for commercial use. On this basis, the various units now in use are discussed as follows:

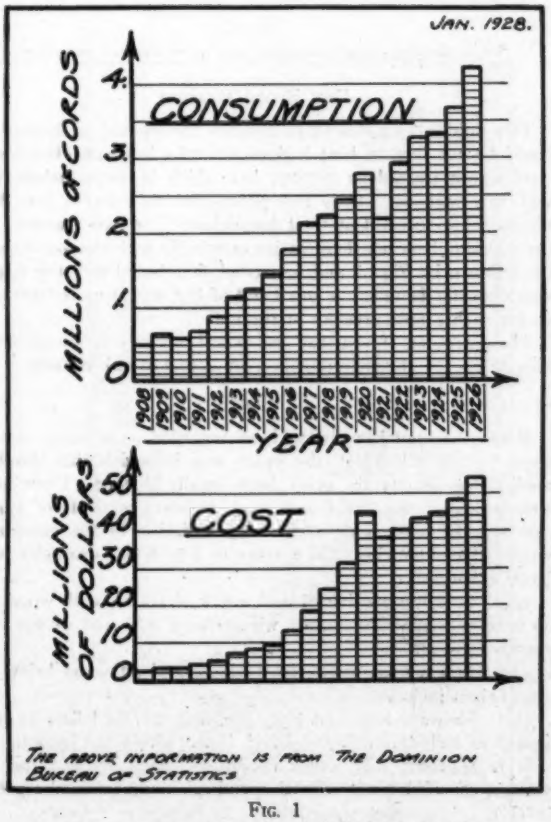


FIG. 1
Quantity and cost of pulpwood consumed in Canada.

* Report of Wood Measurement Committee of the Technical Section of the Canadian Pulp and Paper Association, January 25, 1928. Montreal, Que.

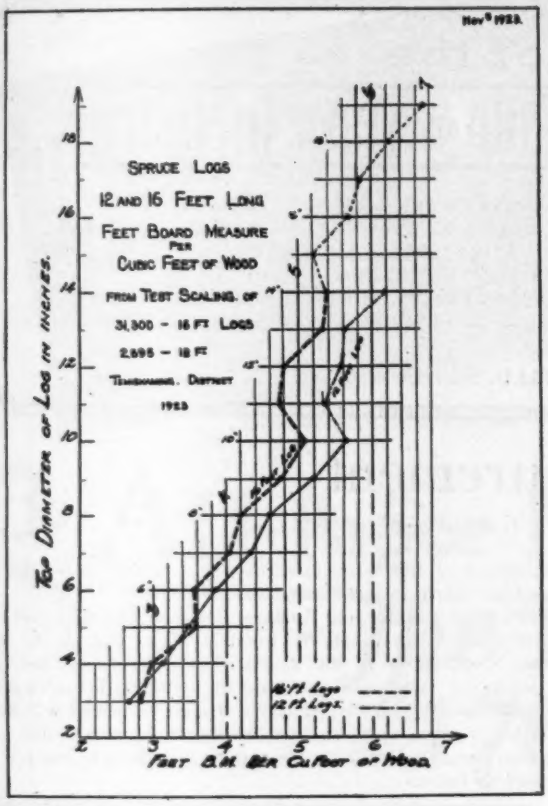


FIG. 2

Curve showing variation between feet board measure and volume.

Feet Board Measure

This unit was originated to indicate the amount of lumber that could be cut from a log; it does not take into consideration the portion not classed as lumber, but which is, nevertheless, pulpmill raw material. It is not practicable to convert feet board measure into equivalent total log volume, for two reasons; first, the equation between them varies erratically with the log diameter, as is shown by Figs. 2 and 3; second, feet board measure requires that diameter be taken at small end of log, and it quite impractical to get such a measurement at the mill.

The foregoing shows that feet board measure is unreliable and unsuitable for the determination of actual wood volume.

Cord

While the cord has always been regarded as a space measurement of 128 cubic feet, the exact way in which this should be applied has apparently never been legally defined. Even in the simple case of the 8′ x 4′ x 4′ cord, different methods of application may be used, with a resulting variation in the quantity of wood. The following, which refer to Fig. 4, are examples in the latter connection:

(A) Is representative of a 4′ x 8′ x 4′ frame, with wood piled so as to be confined altogether within the 4′ x 8′ area, or equivalent thereto.

(B) Is a similar frame piled higher and all wood below four foot height included.

(C) Shows a long and high pile, and the cord here is represented as including all solid wood found within the section.

It is apparent that, other conditions being similar, the least amount of solid wood will be contained in (A) and the greatest in (C).

In addition to the foregoing, there are other factors that contribute toward conflicting results, such as length of logs, thickness of bark, deformities, knots, limbing, and the manner of piling, which, in itself, may vary the solid content up to 20 per cent or possibly more.

Table 1, gives the results of test measurements of various cords of barked and unbarked wood; it will be seen that for unbarked blocks the contents of a cord varied from about 74 to over 90 cubic feet of solid wood, while for barked blocks the contents varied from 87 to 103 solid cubic feet.

With reference to its suitability for commercial use, it can be stated that in many cases the cord is practically impossible to apply as for instance, in the case of long logs. It is even unsuitable frequently to use in the case of 4-foot blocks, and an endeavor is therefore oftentimes made to estimate the cordage by counting the number of pieces. This latter method is very unreliable, because the number of pieces is affected greatly by only a slight change in the average diameter, as is shown by Figs. 5, 6, and 7.

The cord, therefore, cannot be regarded either as a convenient or dependable measure of pulpwood volume.

Cubic Foot

The cubic foot is a volumetric unit, and as such is scientifically correct for the measurement of wood volume; moreover, its practical application is as easy, if not easier, than the units previously referred to.

Your Committee, therefore, recommends that the Industry adopt the solid cubic foot as its standard for pulpwood measurement.

Weight

Weight is very convenient of application under certain conditions. It is a definite quantitative unit and, therefore, is quite accurate, provided that a correction for the moisture content of the wood be

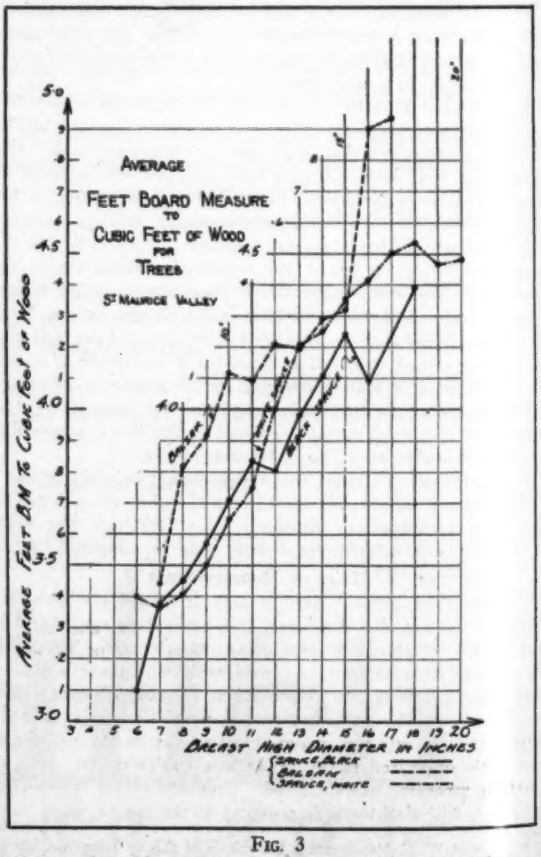


FIG. 3

Curve showing variation between feet board measure and volume.

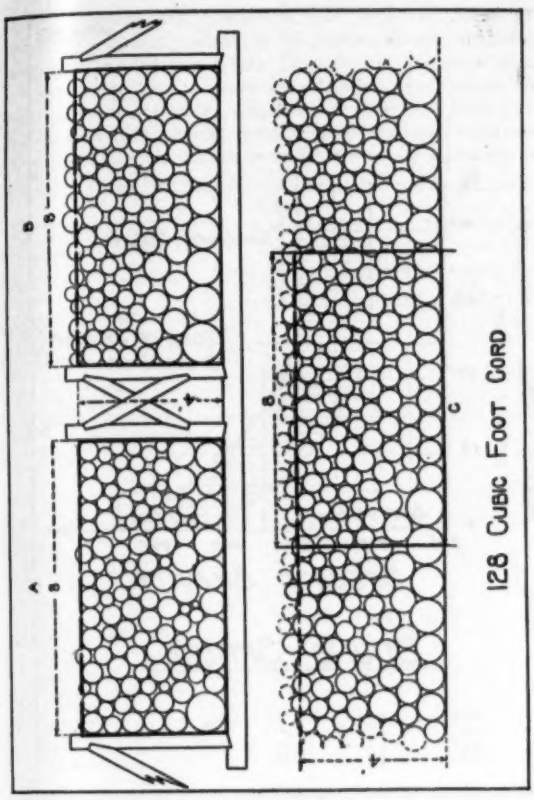


FIG. 4
Various forms of a cord.

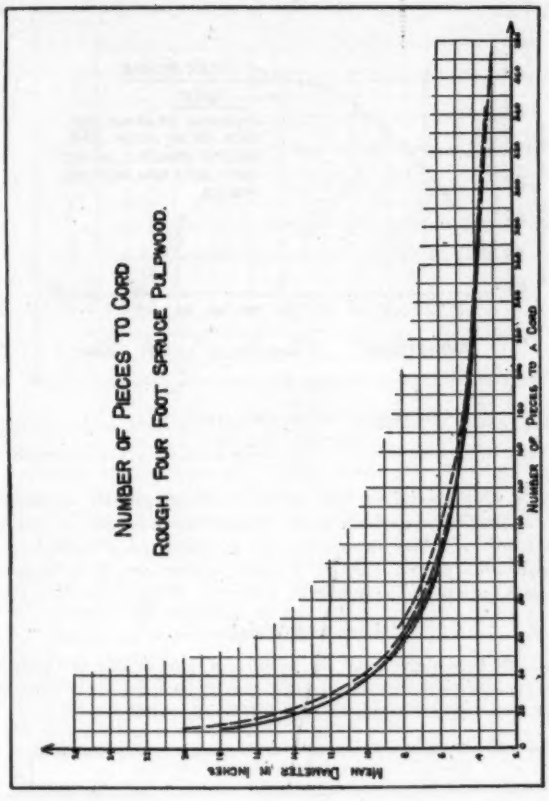


FIG. 6
Approximate number four-foot rough pieces to a cord.

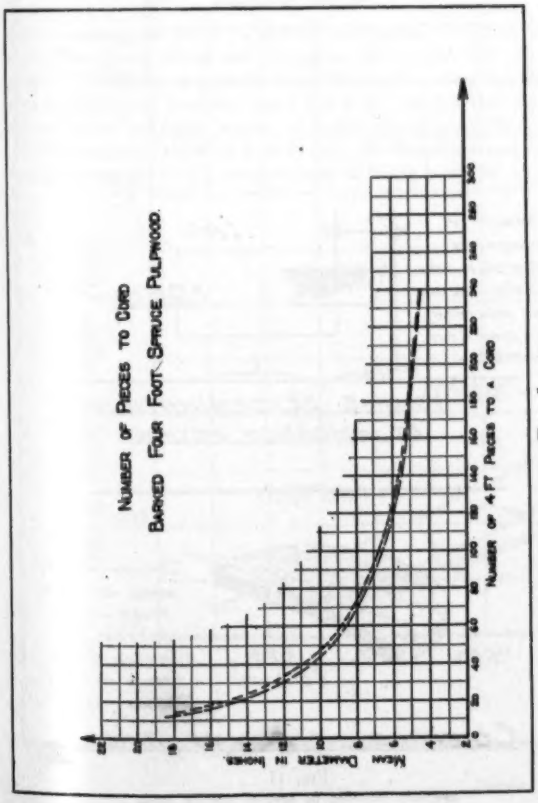


FIG. 5
Approximate number four-foot barked pieces to a cord.

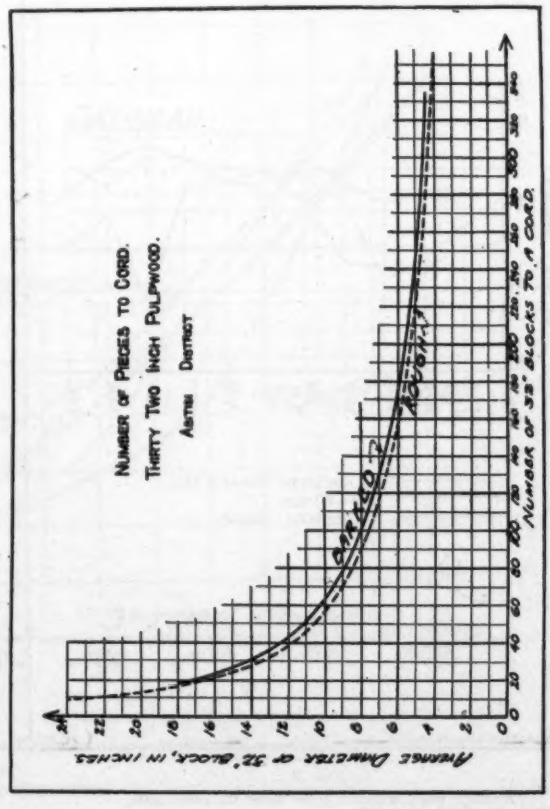


FIG. 7
Approximate number of thirty-two-inch pieces to a cord.

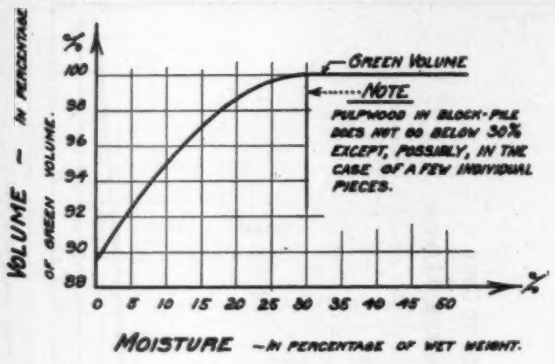


FIG. 8

Shrinkage of spruce while drying.

made--this, of course, involves the making of accurate moisture tests.

In cases where weighing can be more advantageously applied than a volume measurement, your Committee endorses its use. The automatic weighing of wood chips in transit on a conveyor, is an application of this method of measurement, which is being used to some extent in the industry.

Volume and Weight

It has just been shown that the cubic foot, and weight are both correct; the question arises, therefore, that if both are to be used, will this tend toward confusion and conflicting results.

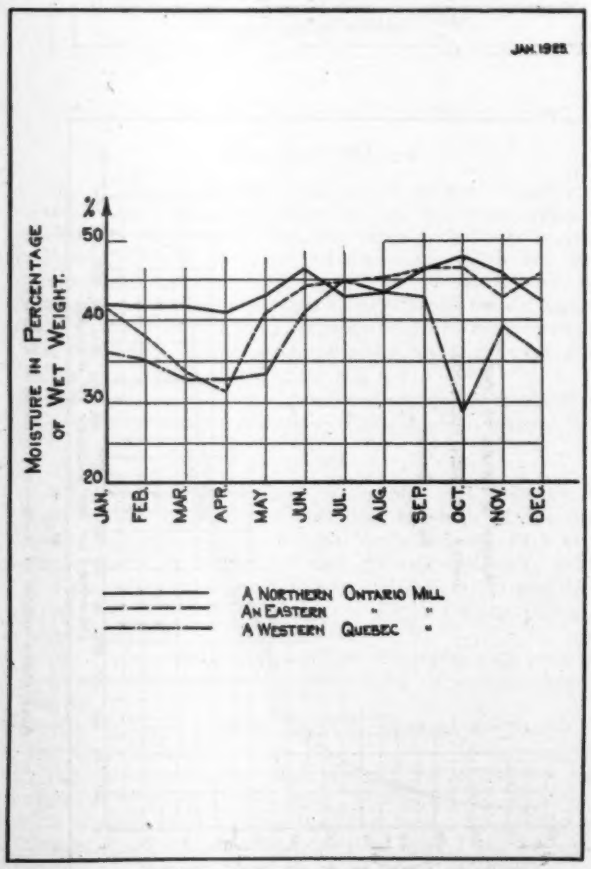


FIG. 9

Average wood moisture from three Canadian mills.

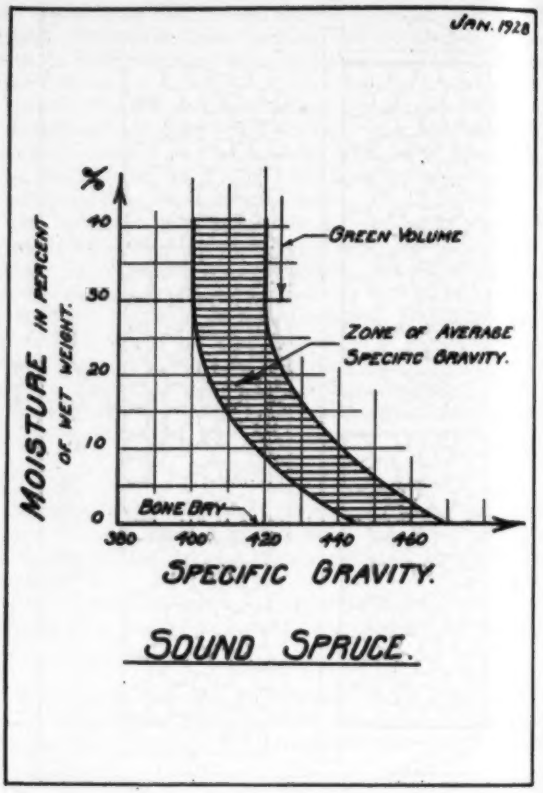


FIG. 10

Comparison of specific gravity based upon wood volume of various moisture percentages.

The call for weighing as a method of wood measurement comes from the mill end of the operation; but in the woods, volume is the natural basis. The difficulty in finding a system of measurement acceptable to the Pulp and Paper Industry as a whole in thus in reconciling the woods end of it—where weight is, of course, out of the question—with the mill, where in many cases weight will no doubt be more practical than volume. It is obvious that both

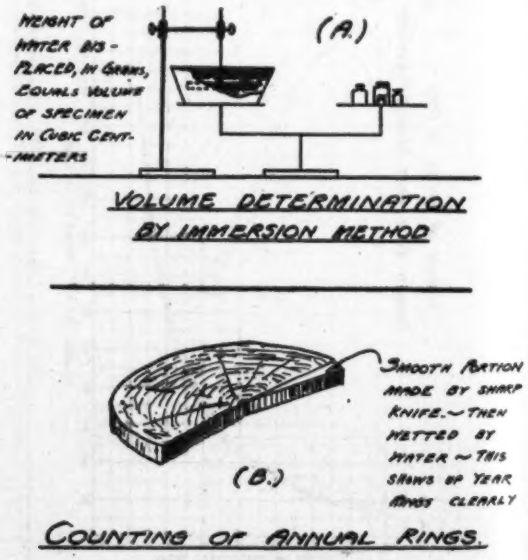

WEIGHT OF WATER DISPLACED, IN GRAMS, EQUALS VOLUME OF SPECIMEN IN CUBIC CENTIMETERS
(A.)
VOLUME DETERMINATION BY IMMERSION METHOD
SMOOTH SECTION MADE BY SHARP KNIFE.—THEN WETTED BY WATER—THIS SHOWS UP YEAR RINGS CLEARLY
(B.)
COUNTING OF ANNUAL RINGS.

FIG. 11

Methods followed in specific gravity tests.

of these methods will continue in use; therefore, to avoid confusion, a method of converting the figures of one to that of the other must be made available. To that end, it became necessary for your Committee to make an extensive experimental density investigation, the object of which was to determine if the relationship between the bone-dry weight of a large and representative run of wood and its volume in cubic feet was a constant; also to determine if this constant varied from year to year; and to compare density characteristics of one district with those of another. This investigation and its application are discussed under the following headings:

I. Factors Causing Density Variations.
II. Specific Gravity (Density) Tests:
  Influence of shrinkage on test specimens.
  Method of making tests.
  Data obtained.
  Characteristic density curves for various districts.
  Yearly chances in district density curves
III. Application of Findings to Practical Use.
  District factor curves.

TABLE 1
TEST MEASUREMENTS OF CUBIC FEET OF SOLID WOOD (PER CORD)

	Cords measured	Average cu. ft. per cord	Minimum cord cu. ft.	Maximum cord cu. ft.
A. Peeled or Barked Wood—				
1. 32 cars peeled and rossed four-foot (measured row by row in cars) at Hawkesbury, Ont.	515	95.35	86.8	103.0
2. Hawkesbury — four-foot barked wood	13½	99.5	98.1	101.1
3. Abitibi (32" long)	34	94.2	82.3	101.8
4. Black River—(cord)	1	84.2		
(8' × 4' × 4') 3" diam.	1	84.2		
4" diam.	1	86.9		
5" diam.	1	93.7		
6" diam.	1	94.0		
7" diam.	1	96.3		
8" diam.	1	97.3		
B. Rough, i.e., Unbarked—				
1. Abitibi (32" long)	34	83.4	74.0	91.3
2. Hawkesbury — four-foot, measured under bark in place, row by row, in cars. Mostly spruce	406	84.99	80.28	90.68
3. Hawkesbury — four-foot — grown in open fields, large knots, etc. Measured in cars. Mostly spruce	70	79.21	75.76	81.55
4. Dominion Forest Service Tests—				
New Brunswick—red spruce	104	84.5	79.4	87.9
Chicoutimi—red spruce	8	87.0	82.0	90.4
Quebec—balsam	38	84.8	82.3	88.5
Quebec—balsam	41	81.5	79.6	84.5

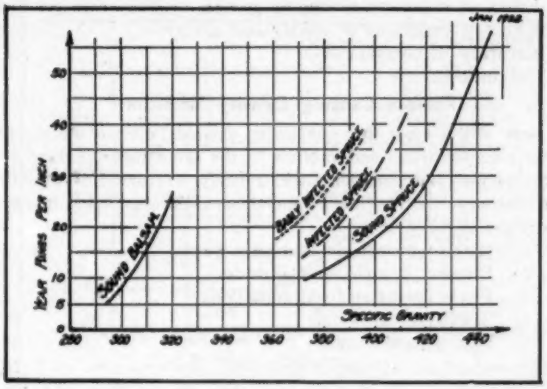


FIG. 13
Curves showing effect on specific gravity of differences in species, year rings per inch, and quality.

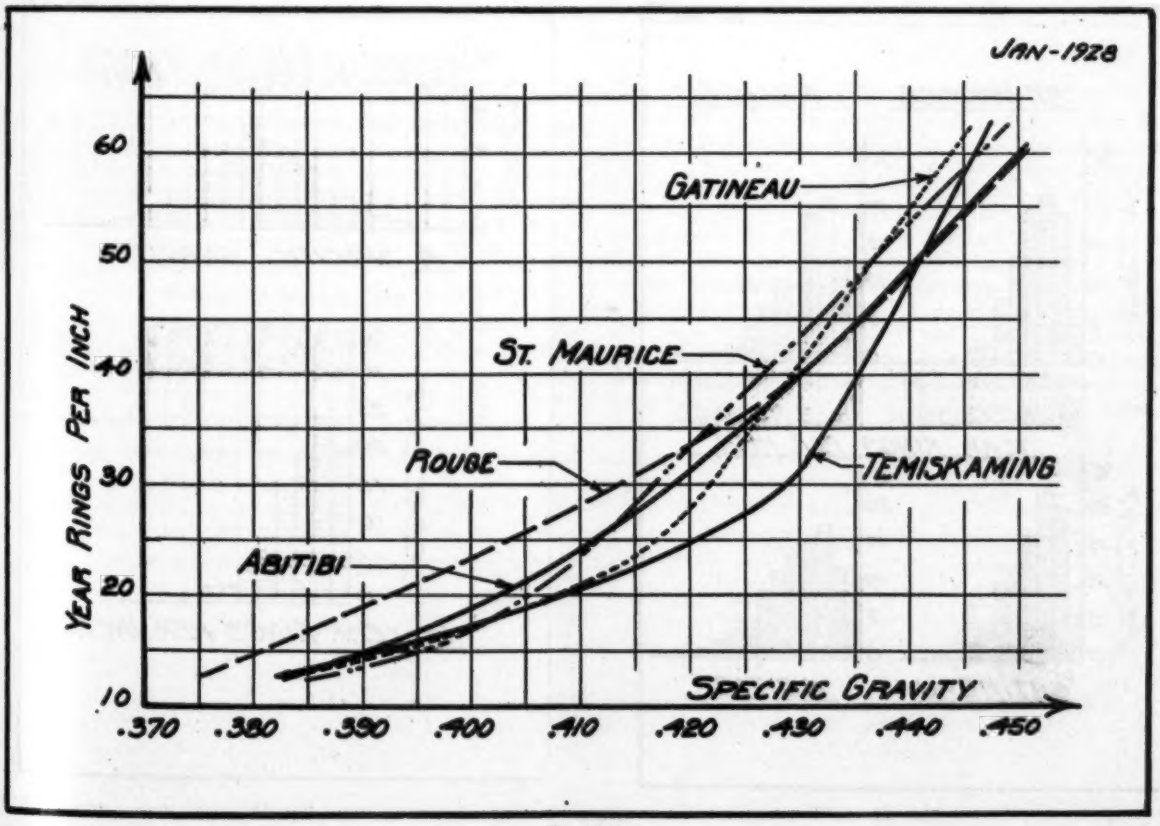


FIG 12
District specific gravity curves.

Effect of variations in rate of growth, or year rings per inch.
Effect of variations in species and quality.
Accuracy of computation
Conclusions.

Factors Causing Density Variations

It was well known that variations existed between the density of one piece of wood and another of the same species; therefore, preceding our experimental work, a study was made of available data relative to the factors causing these variations. Briefly, these factors are as follows:

(1) Rate of growth, or year-ring width.
(2) Climate, latitude, and altitude.
(3) Environment and soil conditions.
(4) Soundness of wood.
(5) Differences in species.

With respect to latitude, altitude, etc., invesigations of Ortenbald,[1] Wijkander[1] and G. Kinmann,[1] show that in Norrland, Sweden, for the same width of year rings, lower values of dry substance per unit are obtained close to the mountain ranges and in exposed locations, than in protected and warmer places. Wijkander's data also shows differences of from two to three pounds of dry substance per cubic foot between Southern and Northern Sweden. The results of a large number of tests by Jankas[1] in Austria, indicate that the same year-ring width, the best spruce is that where there is access to moisture and rich soil; and that, in general, a lighter wood is produced from rocky and poor soil.

The "thinning out" degree of the forests also is a material factor. The tendency, of course, will be for the isolated tree to have wider year rings, and consequently lighter wood, than the comparatively slow growing tree of a dense forest.

Fig. 13, is given as indicating the effect of rate of growth upon the amount of bone-dry substance per unit—this being from various tests made at Canadian Mills. The curve also indicates the decided difference in yield between sound and inferior quality spruce, and between balsam and spruce. It will be noted, for instance, that for sound spruce, the dry substance at fifteen year rings per inch is nine per cent lighter than at forty-five rings, and that balsam is about twenty-four per cent lighter than spruce.

The various factors that cause variations in the density have just been outlined; but, as is demonstrated hereinafter, if large quantities of wood are considered, these variations even out, with the result that it may be concluded that the average density for the same species and district is practically a constant. The importance of this conclusion is that wood volume can at once be converted into equivalent wood weight, or bone-dry or air-dry pulp or paper, through manipulation by a constant factor.

Wood Shrinkage

It has been shown by various investigators that, as green wood is being dried out, there is at first practically no change in volume—that it is only after the moisture content has been reduced quite considerably, that shrinkage begins. The critical moisture percentage below which drying is accompanied by changes in volume and mechanical and physical properties, has been named the fiber saturation point.[2] The fiber saturation point of spruce is given by different authorities at values ranging from 23.5 to about 28 per cent, based on wet weight, and from 30 to 40 per cent when based on bone-dry weight.

Curve of Fig. 8, shows the volumetric change from wet to bone-dry wood, and illustrates the preceding point very clearly.

Now, as a usual thing at most mills, pulp wood has not an opportunity of drying below 23.5 per cent moisture before it is used, as is indicated by Fig. 9. Wood stored for two years

[1] Skogsvards Foreningens Tidskrift, July-August, 1923.

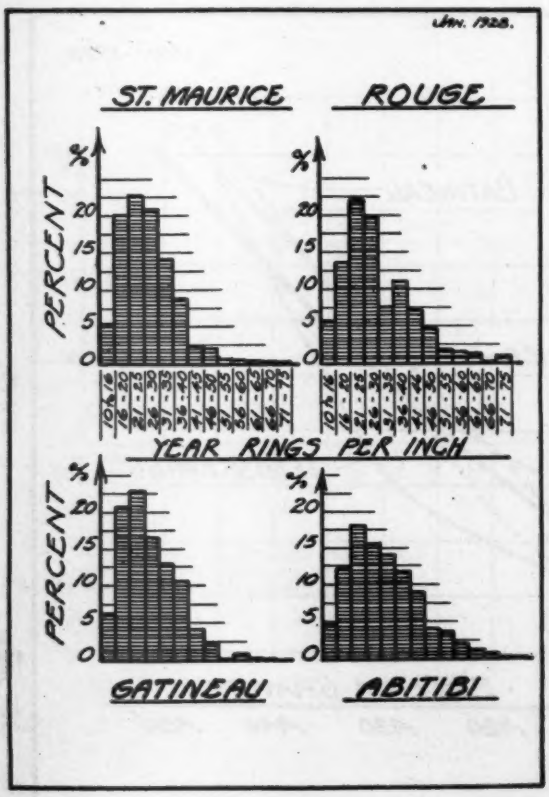


FIG. 14

Curves showing distribution of test specimens according to year rings per inch.

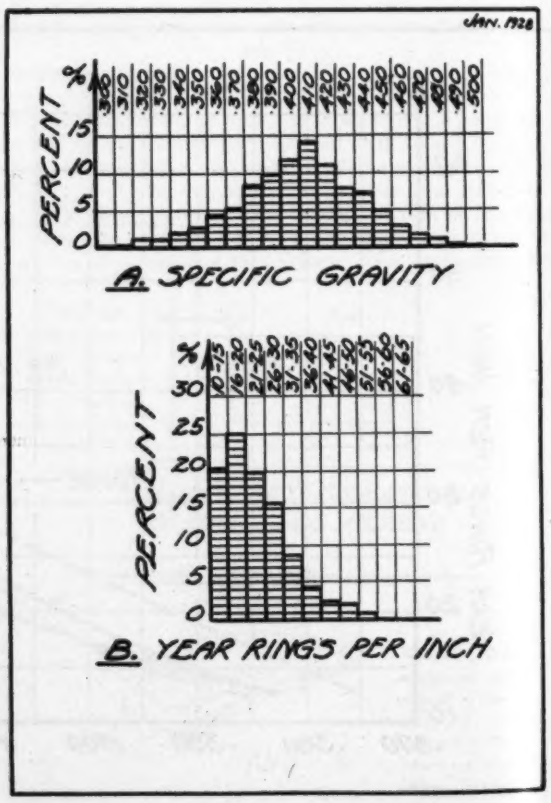


FIG. 15

Distribution of Temiskaming District specimens according to specific gravity and rate of growth.

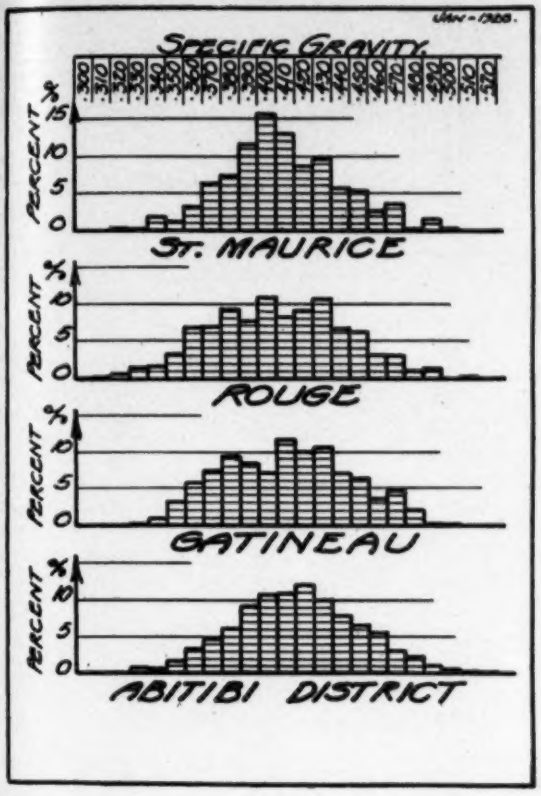


FIG. 16

Curves showing distribution of specific gravity of test specimens in various districts.

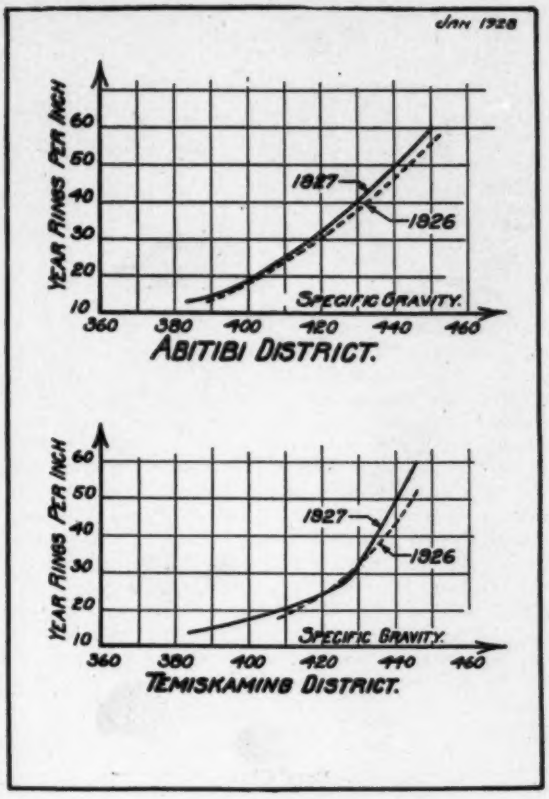


FIG. 17

Comparison of district density curves for years 1926 and 1927.

or more might at the top of the pile dry out to that point, or lower; but for all practical purposes, it may be accepted as a fact that the block pile wood is well above the critical moisture and that its volume is therefore unchanged from what it was in the bush. This means that as far as the density investigation is concerned, shrinkage in volume due to drying may be disregarded entirely.

Methods of Making Tests

The tests were made principally in 1926 and 1927, and the extent of the work is indicated by the fact that about 3000 tests were made in the latter year alone. The procedure was as follows:

The wood samples were smooth discs, cut the full diameter of log, and about three-quarters of an inch thick. The volume was determined by a buoyancy, or water displacement, measurement, in accordance with the method recommended by the Forest Products Laboratories of Canada and the United States. To prevent possibility of absorption during the measurement the discs were soaked in water for several hours previously. Fig. 11A illustrates the water displacement method of determining the volume of the specimen. Fig. 11B shows how the specimen was prepared so as to make easier the counting of year rings, and the detection of the resin ducts, whose presence or absence enables one to distinguish between spruce and balsam fir. Under the hand lens, these resin ducts appear on the smoothly cut surface as small, light colored spots—their absence denotes balsam fir.

TABLE 2
SPECIFIC GRAVITY TESTS†—"ST. MAURICE" WOOD

Spruce—1927

Average annual rings per inch	Quality Class 1		2		3		4		5		Average	
	No. Tests	Sp. Gr.	No.	Sp. Gr.	No.	Sp. Gr.	No.	Sp. Gr.	No.	Sp. Gr.	No.	Sp. Gr.
10-15	20	.386	18	.392	18	.381	10	.372	1	.406	67	.385
16-20	74	.403	41	.381	34	.389	19	.379	4	.383	172	.392
21-25	84	.409	34	.406	28	.400	12	.408	3	.410	161	.407
26-30	77	.414	28	.407	17	.416	12	.390	1	.363	135	.411
31-35	52	.424	18	.416	11	.385	5	.430			86	.418
36-40	33	.418	14	.410	6	.418	5	.419	1	.413	59	.416
41-45	9	.441	8	.424	5	.423	2	.461	1	.389	25	.431
46-50	8	.421	2	.416	2	.420	1	.409	1	.444	14	.421
51-55	2	.454	1	.432	1	.357					4	.424
56-60	2	.471	2	.415			2	.400			6	.429
61-65	2	.449									2	.449
66-70	2	.481	1	.380							3	.447
71-75	1	.442									1	.442
76-80					1	.419					1	.419
Average	366	.413	167	.402	123	.397	68	.395	12	.398	736	.406

NOTE.—1. Quality 2 indicates a slight amount of discoloration; qualities 3, 4 and 5 represent a gradual change to No. 5 which applies where there is discoloration over practically all of the specimen and, in addition, evidence that disintegration of the wood is beginning.
2. Specific gravity is based on "green" volume and bone-dry weight.

TABLE 3
SPECIFIC GRAVITY TESTS †—"ROUGE" WOOD

Sound Spruce—1927

Average annual rings per inch	Diameter Class 3"-3.9" No. Tests	3"-3.9" Sp. Gr.	4"-4.9" No.	4"-4.9" Sp. Gr.	5"-5.9" No.	5"-5.9" Sp. Gr.	6"-6.9" No.	6"-6.9" Sp. Gr.	7"-7.9" No.	7"-7.9" Sp. Gr.	8"-8.9" No.	8"-8.9" Sp. Gr.	9"-9.9" No.	9"-9.9" Sp. Gr.	Average No.	Average Sp. Gr.
10-15			4	.383	8	.372	9	.372	3	.391					24	.376
16-20	2	.369	10	.381	10	.375	18	.392	10	.384	5	.387			55	.384
21-25			16	.393	30	.399	20	.409	17	.404	6	.387	1	.443	90	.401
26-30	3	.402	15	.408	31	.411	14	.408	13	.409	3	.426	2	.388	81	.410
31-35	4	.390	7	.412	8	.437	5	.419	7	.395					31	.413
36-40	3	.377	19	.431	7	.439	10	.425	4	.404	2	.432			45	.427
41-45	2	.406	7	.447	13	.430	6	.458	3	.419					31	.437
46-50	4	.449	2	.446	10	.437	3	.411	1	.426					20	.436
51-55	1	.493	6	.456	1	.433									8	.458
56-60			4	.461	3	.462									7	.461
61-65			4	.479	1	.397	1	.449							6	.444
66-70							1	.445							1	.445
71-75	2	.374	2	.484											4	.429
Average	21	.404	96	.420	122	.411	87	.408	58	.401	16	.400	3	.406	403	.410

† Based on bone-dry weight and "green" volume.

The specific gravity was computed on the basis of green volume and bone-dry weight, and it is well to mention here that there is much data published that refers to specific gravity based on bone-dry volume. To indicate the decided difference between the two systems, Fig. 10 is given. This figure shows, for instance, that if the specific gravity of a specimen at 30% moisture was .400, it will be .410, at 15%, and at dry volume, .445.

In securing specimens, the aim has been to obtain a selection of wood that would be closely representative of the district. In that connection, the possibilities of enlarging the investigation are manifest;—the more tests and the longer the time in selecting them, the closer to correct;—but the Committee feels that the data it was able to obtain, and which are given herein, fulfils adequately the requirements of this report.

Data Obtained

As the investigation of 1927 was more comprehensive than that of the other years, and also since the results were practically similar, only the detailed figures for that year are given herein. These figures follow in Tables 2 to 9, inclusive; and to present the information to best advantage for analysis, graphical curves have been plotted as per Figures Nos. 12 to 17, inclusive.

TABLE 2—St. Maurice District: In this group of spruce samples, a classification was made according to quality and year rings per inch.

TABLES 3 TO 6.—Rouge, Gatineau, Temiskaming, and Abitibi Districts: These cover sound spruce, and the specific gravity is given according to diameter class, and year rings per inch.

TABLE 7.—This is for balsam fir, and is given for various year rings per inch from different locations.

TABLES 8 AND 9.—Distribution of spruce specimens according to rate of growth and specific gravity.

It is seen from Fig. 12 that the average specific gravity grouped according to year rings per inch, resolves itself into a characteristic curve, or factor, for wood of the same species, equality, and district. This is very important, as it demonstrates that despite the fact that wide variations in density occur between individual specimens of the same year—ring width, yet the average of a large number of the same year—ring width is practically a constant.

It is also of special interest to note that although the tests covered a wide range of territory,—from the St. Maurice Watershed to the Abitibi district—the various district curves have pretty much the same general shape and lie closely together. Where differences do occur between one and the other, they are as might be expected because of the influence of differences in such factors as precipitation, latitude, soil conditions, and, possibly, varying proportions of white and black spruce.

It is evident that a definite density curve for a district not only exists, but that it may be determined by a practical investigation.

Yearly Changes in the Density Curves

With reference to the question as to whether or not the average density differs materially from year to year, our conclusion is that under normal conditions, it does not. A comparison of the curves of 1926 and 1927, as given in Fig. 17, for two of the regions investigated, supports our conclusion. In addition as already noted, all of the district curves in Fig. 12 lie together, and it is reasonable to infer that there could not possibly be much fluctuation in any of them from year to year, unless abnormal conditions intervened, such as fire, etc.

Application of Findings to Practical Use

The question now arises as to how close to correct, the average density or specific gravity of a run of wood can normally be determined.

District Curves

The first requisite in the determination is to have correct density curves for the spruce and balsam of the district. We consider that the findings of the Committee are ample evidence that it is practicable to establish such curves, but it is well to

TABLE 4
SPECIFIC GRAVITY TESTS †—"GATINEAU" WOOD

Sound Spruce—1927

Average annual rings per inch	Diameter Class 3"-3.9" No. Tests	3"-3.9" Sp. Gr.	4"-4.9" No.	4"-4.9" Sp. Gr.	5"-5.9" No.	5"-5.9" Sp. Gr.	6"-6.9" No.	6"-6.9" Sp. Gr.	7"-7.9" No.	7"-7.9" Sp. Gr.	8"-8.9" No.	8"-8.9" Sp. Gr.	9"-9.9" No.	9"-9.9" Sp. Gr.	Average No.	Average Sp. Gr.
10-15	1	.372	2	.362	8	.393	4	.368	3	.376	3	.383			22	.380
16-20	1	.375	15	.409	20	.400	13	.391	12	.408	7	.395	3	.383	71	.400
21-25	5	.424	17	.416	19	.414	18	.420	14	.410	3	.448	2	.397	78	.416
26-30	1	.372	13	.425	24	.428	8	.428	8	.405	2	.407	1	.360	57	.421
31-35	3	.434	10	.428	19	.432	8	.412	3	.427	2	.401			45	.425
36-40	2	.401	8	.429	13	.417	12	.427	1	.452					36	.424
41-45	2	.349	5	.432	7	.451	1	.430							15	.430
46-50	1	.499	3	.441	3	.423	1	.406							8	.431
51-55	1	.455													1	.455
56-60			3	.439											3	.439
61-65							1	.451							1	.451
66-70			1	.425											1	.425
71-75	1	.400													1	.400
76-80																
81-85																
Average	18	.409	77	.420	113	.419	66	.413	42	.407	17	.405	6	.384	339	.415

† Based on bone-dry weight and "green" volume.

TABLE 5
SPECIFIC GRAVITY TESTS †—"TEMISKAMING" WOOD
Sound Spruce—1927

Average annual rings per inch	Diameter Class 3"-3.9" No. Tests	Sp. Gr.	4"-4.9" No.	Sp. Gr.	5"-5.9" No.	Sp. Gr.	6"-6.9" No.	Sp. Gr.	7"-7.9" No.	Sp. Gr.	8"-8.9" No.	Sp. Gr.	9"-9.9" No.	Sp. Gr.	Average No.	Sp. Gr.
10-15	4	.366	31	.383	56	.386	32	.386	4	.400	1	.356	2	.345	130	.385
16-20	12	.401	68	.395	59	.395	9	.396	9	.397	3	.382			160	.396
21-25	15	.398	51	.411	49	.418	7	.430	5	.424					127	.414
26-30	7	.451	31	.428	49	.435	8	.417	3	.438	3	.419			101	.432
31-35	4	.414	17	.422	24	.435	7	.437							52	.430
36-40	3	.469	9	.431	10	.430	7	.433							29	.435
41-45	2	.419	9	.425	3	.435	3	.427							17	.426
46-50	2	.413	8	.434	4	.445									14	.434
51-55			2	.451	3	.446	1	.397							6	.440
56-60			1	.420											1	.420
61-65					1	.410									1	.410
Average	49	.412	227	.408	258	.412	74	.405	21	.410	7	.394	2	.345	638	.410

† Based on bone-dry weight and "green" volume.

point out here that the specific gravity tests, which form the basic data, should be spread over a sufficiently long time to ensure a representative average. To assist in determining if the wood is representative, curves such as Figs. 14, 15 and 16, are of considerable value.

Effect of Variations in Rate of Growth

Second, inasmuch as the density varies according to the rate of growth, or year rings per inch, this fact must be taken into consideration. For instance, take a run of wood that originated in open fields, or cut-over lands — its density would be less than the general average, due to its growth being faster. In such cases, a rate of growth classification (See Fig. 14) should be made, which is readily done by measuring the diameter and counting the year rings of a representative number of logs. The over-all specific gravity may then be determined by applying this data proportionately to the district density curve, Fig. 12.

It is reasonable to suppose, however, that as a general rule a large run of wood will have practically the same rate of growth characteristics as that of the whole cut. This would appear to be substantiated by our experience. In four of the districts, the test specimens were selected over a period of some months, and, therefore, must have been fairly representative. Their rate of growth classifications are shown in Fig. 14, and the general similarity in the shape of the curves is very evident. This would suggest that any large and well mixed run of logs in these districts would have a rate of growth classification practically the same as that shown.

Effect of Variations in Species, and Quality

The other factors to be considered in determining the average specific gravity are differences in species and the amount of infection by rot. Balsam fir, as shown by Table 7, has a specific gravity. Tests of spruce at Temiskaming in 1923, showed a 24% lighter than spruce; it is obvious that the percentage of balsam fir in a run of logs must be known. The degrees of infection present should also be known, as it tends to lower specific grivity. Tests of spruce at Temiskaming in 1923, showed a depreciation of about 6%, in cases where there was considerable discoloration by infection, about the same effect was noted from the 1927 work. See Table 2 and Fig. 13.

It is shown in the foregoing that density curves, and rate of growth classifications, may be definitely established; and that,

TABLE 7
SOUND BALSAM FIR
Specific Gravity †—1927

Annual rings per inch	1927 "Lower Ottawa" No. Tests	Sp. Gr.	1927 "St. Maurice" No. Tests	Sp. Gr.	1926 "Lower Ottawa" No. Tests	Sp. Gr.
5-10	1	.307	2	.301	21	.304
11-15	18	.319	34	.305	65	.308
16-20	29	.323	27	.307	64	.319
21-25	16	.328	20	.316	24	.318
26-30	8	.334	4	.323	3	.339
31-35	4	.347	1	.315		
36-40	1	.338				
Total and average	71	.325	88	.309	177	.313

† Bone-dry weight and "green" volume.

TABLE 8
SPECIFIC GRAVITY TESTS—1927
Statement showing distribution of specimens according to "rate of growth" or "year rings per inch."
Sound Spruce
Percentage

Year rings per inch Class	St. Maurice	Rouge	Gatineau	Temiskaming	Abitibi
10-15	5.5%	5.9%	6.5%	20.3%	4.8%
16-20	20.2	13.7	21.0	25.0	12.2
21-25	23.1	22.4	23.1	19.9	17.3
26-30	21.0	20.1	16.8	15.8	16.2
31-35	14.2	7.7	13.3	8.7	14.6
36-40	9.0	11.2	10.6	4.4	11.8
41-45	2.5	7.7	4.4	2.6	8.9
46-50	2.2	4.9	2.4	2.2	4.7
51-55	.5	2.0	.3	.9	3.8
56-60	.5	1.7	1.0	.1	2.5
61-65	.5	1.5	.3	.1	1.3
66-70	.5	.2	.3	—	.9
71-75	.3	1.0	—	—	.4
76-80	—	—	—	—	.3
81-85	—	—	—	—	.3
	100.0%	100.0%	100.0%	100.0%	100.0%

TABLE 6
SPECIFIC GRAVITY TESTS †—ABITIBI WOOD
Sound Spruce—1927

Average annual rings per inch	Diameter Class 3"-3.9" No. Tests	Sp. Gr.	4"-4.9" No.	Sp. Gr.	5"-5.9" No.	Sp. Gr.	6"-6.9" No.	Sp. Gr.	7"-7.9" No.	Sp. Gr.	8"-8.9" No.	Sp. Gr.	Average No.	Sp. Gr.
10-15			9	.383	7	.357	15	.386	12	.396	7	.377	50	.382
16-20	4	.412	17	.400	36	.392	18	.400	36	.401	16	.391	127	.397
21-25	4	.421	41	.410	42	.413	29	.410	51	.407	13	.405	180	.410
26-30	5	.395	34	.407	52	.417	19	.413	39	.415	19	.414	168	.413
31-35	7	.410	22	.414	32	.414	25	.417	41	.424	24	.417	151	.417
36-40	2	.428	22	.426	25	.442	25	.419	43	.429	5	.439	122	.429
41-45	2	.364	14	.439	34	.434	21	.428	20	.439	1	.430	92	.433
46-50	4	.413	8	.434	23	.444	11	.436	3	.457			49	.439
51-55	2	.458	16	.433	14	.428	5	.438	2	.468			39	.435
56-60	4	.442	11	.453	8	.451	2	.435	1	.455			26	.449
61-65	3	.418	7	.437			2	.502	2	.441			14	.440
66-70			4	.473	2	.470	3	.472					9	.472
71-75			1	.510	2	.467	2	.443					5	.466
76-80			1	.425	1	.525	1	.465					3	.472
81-85			2	.435	1	.465							3	.445
Average	37	.415	209	.419	279	.421	178	.417	250	.417	85	.408	1038	.417

† Based on bone-dry weight and "green" volume.

TABLE 9
SPECIFIC GRAVITY TESTS—1927
Statement Showing Variations in Specific Gravity.
Sound Spruce

Specific gravity Class	Number of Specimens				
	St. Maurice	Rouge	Gatineau	Temiskaming	Abitibi
.300	—	1	—	1	—
.310	—	1	—	1	1
.320	1	3	—	8	0
.330	1	6	1	7	8
.340	7	7	3	12	9
.350	5	13	11	17	16
.360	12	28	20	29	33
.370	24	28	25	34	49
.380	27	37	32	54	60
.390	43	31	29	64	98
.400	57	44	24	76	114
.410	48	33	40	91	113
.420	32	37	34	72	127
.430	36	43	36	51	106
.440	21	27	24	47	83
.450	20	25	22	32	66
.460	10	13	13	19	61
.470	14	13	16	11	37
.480	1	5	7	7	26
.490	6	6	1	3	12
.500	1	—	1	1	6
.510	—	2	—	1	6
.520	—	—	—	—	4
.530	—	—	—	—	2
.540	—	—	—	—	0
.550	—	—	—	—	1
	366	403	339	638	1038
Average Sp. Gr.	0.413	0.410	0.415	0.410	0.417

therefore, if the proportion of various species, and of infected wood, be known, the average specific gravity may be accurately determined. It is recognized that there will be cases where it may be difficult to arrive at this proportion of species and of infection—particularly for a comparatively small run of wood. We would, however, give as our opinion that, with reasonable care, the consumption transferring weight to volume, or vice versa, will give results that fulfill the requirements of the Industry.

Conclusion

We conclude that if a volumetric measurement of a quantity of wood be made, it is practicable to compute its weight of bone-dry substance, if such information be desired. Similarly if at the mill, weight be used as being the most advantageous method of measurement, then its equivalent "green" volume can be determined.

TAPPI Notes

Major and Mrs. William Nash sailed on the Berengaria to England on March 2. Major Nash, who is chairman of the Technical Section of the Paper Makers Association of Great Britain and Ireland and also a member of TAPPI, visited mills of the American Writing Paper Company, Strathmore Paper Company, Crocker-McElwain Company and Chemical Paper Manufacturing Company.

Major Nash was the guest of E. C. Tucker while in Holyoke and of G. E. Williamson in Woronoco.

W. F. Goldsmith of Arthur D. Little, Inc., of Cambridge, Mass., visited the Technical Association offices on Saturday.

Gerald L. Wendt of Pennsylvania State College and one of the speakers at the 1927 annual banquet of TAPPI has been selected as the Director of the Battelle Memorial Institute of Columbus, Ohio.

Ralph A. Hayward Gets Patent

[FROM OUR REGULAR CORRESPONDENT]

KALAMAZOO, Mich., March 5, 1928.—Ralph A. Hayward, general manager of the Kalamazoo Vegetable Parchment Company, has been granted a patent on a device to remove the water from waxed paper. Under the present system of waxing papers, the newly waxed paper is plunged into a bath of ice cold temperature, hardening the wax. The Hayward device, a series of blower heads, attached to a blower, removes this water immediately, without interfering with the wax surface. The patent is assigned to the Kalamazoo Vegetable Parchment Company.

German Technical Association Summer Meeting

For the Visit of Canadian and American Pulp and Papermakers to the Summer Meeting of the "Verein der Zellstoffund Papier-Chemiker and Ingenieure" (Association of Pulp and Paper Chemists and Engineers), June 11, 12, in Heidelberg.

ITINERARY

Sunday, May 26. Sail from New York on S.S. Berlin of the North German Lloyd Line.

Monday, June 4. Arrival in Bremen.

Tuesday, June 5. Arrival in Cologne. Sightseeing.

Wednesday, June 6. By automobile or train to Bergisch-Gladbach. Visit to J. W. Zander's Fine-Paper Mill. Return to Cologne in the evening.

Thursday, June 7. (Fronleichnam—Holiday). Trip on the Rhine from Cologne, 6:30 a. m. to Biebrich. Arrival 7:30 p. m. The night spent in Wiesbaden.

Friday, June 8. At 6 a. m. to Aschaffenburg. Arrival 8:55 a. m. Visits to Pulp and Paper Mills in Aschaffenburg and eventually also Stockstadt. Optional afternoon trip to Darmstadt and visit to the Technical University and Institute for Pulp and Paper Technology and Cellulose Chemistry. In the evening, trip to Mannheim.

Saturday, June 9. In the forenoon visit to the Waldhof Pulp Mill. In connection with this, trip to Oppau and Ludwigshafen Visit to the Nitrogen Works of the I. G. Farbenindustrie A/G, Oppau, and to the Bleach Powder Plant and Paper Department in Ludwigshafen. In the evening to Heidelberg.

Sunday, June 10. Day of leisure. Sightseeing in Heidelberg. In the evening; Reception.

Monday, June 11. Summer meeting of the Association with Lectures. In the evening; Banquet.

Tuesday, June 12. Excursion to the Neckarthal. Social evening in the Castle. (Parting celebration.)

Wednesday, June 13. From Heidelberg at 7 a. m. over Heilbronn, Crailsheim to Heidenheim. Arrival at 2:20 p. m. Visit to J. M. Voith's Machine Works, Heidenheim. 5:53 p. m., Trip to Augsburg. Arrival at 3:34 p. m.

Thursday, June 14. Visit to Gebr. Haindl's Newsprint Mill, Augsburg. In the afternoon, trip to Nuernberg.

Friday, June 15. Sightseeing in Nuernberg. 9:30 p. m. with "Sleeper" to Dresden.

Saturday, June 16. Visit to the Ragpulp Mill Peschelmuehle (Louis Staffel) and return to Dresden.

Sunday, June 17. Sightseeing in Dresden. In the evening to Berlin.

Monday, June 18. Sightseeing in Berlin and visit to the new large Power Station Klingenberg.

Tuesday, June 19. Trip to Stettin. From Berlin 8:25 a. m. Arrival in Stettin 10:30 a. m. Visit to the Mills Odermuende and Die Feldmuehle Papier-und Zellstoffwerke A/G. Return to Berlin 7:08 p. m. Arrival 9:22 p. m.

Sunday, June 23. Sail from Bremen on S. S. Columbus.

Monday, July 2. Arrive in New York.

Some members of TAPPI have expressed considerable interest in these proposed meetings. The secretary of of the Technical Association will be glad to assist any member in planning his trip and in the event that several members desire to make the tour a special party can be arranged. Reservations should be made early so that the German Association may arrange to take care of visitors.

New Taylor Coal Burning Unit Catalog

How to make more heat from a pound of coal is described in the new Taylor Unit Catalog just published by the American Engineering Company, of Philadelphia, Pa. The booklet is beautifully printed and illustrated. In this new combustion system, control of fuel and control of air, combined with heat-absorbing elements that modify furnace temperatures, result in hitherto undreamed of control of furnace conditions.

Measuring Jordan Power Requirements

By H. D. Martindale[1]

I want this paper to be accepted as a discussion, and that won't be possible unless we all add what we can and then out of the aggregate pick out the information that is of value, and in this way make some progress. To begin, I want to be on record now as saying I don't believe at the present time there is any hard and fast rule that can be set up that will indicate just the proper amount of power to apply under all conditions to any given unit of a beater room and especially is this true of a jordan.

In the first place, your raw material, while it is apparently uniform, is found upon close scrutiny to be quite un-uniform, therefore, to be truly scientific, each batch should receive a different treatment. That, however, is not possible in a paper mill and consequently we have to work more with average than individual batches.

The cause of this variation goes back to nature. Two adjacent sulphite plants will use timber showing widely different growth structures. This might indicate the need of different methods of procedure in making the pulps from different trees. Then there are variations in the cooking of the same wood which causes variations in the resulting pulp, so that by the time this material gets to the paper makers it has quite a mixture of various sizes and types of fibres, so it is very clear why it is necessary to work on averages.

If it were not for the influence of mechanical elements as well as the human element, it should be a fairly easy matter to make a set of rules that would be a guide in the treatment of this pulp, and thereby compile a table of horse power requirements to be applied to each unit used in the process; but we all know from experience that this cannot be done. The power required to overcome mechanical defects varies in each mill and there seems to be no way to control this. In addition to this there is the human element.

With all the modern methods of control and all the improved appliances we are now using, I cannot help but make comparisons with paper made many years ago and marvel at the ability of the old paper mill superintendent who knew very little of chemistry and had no technical help and no automatic control to assist him in any way. He certainly made some wonderful sheets of paper and in many cases was able to duplicate the grade and quality. In the old days the tonnages were small and the operations were few, thereby enabling the superintendent to watch every step but now that mills are larger and the machinery is being run at higher and higher speed, it is becoming increasingly difficult to get detailed supervision. Therefore the demand for automatic controls and gages by which you can control certain operations, is becoming very necessary.

In the old days papers were made in the beater inasmuch as the jordan was unknown. As increased tonnage was demanded, however, the jordan was introduced. As time went on and still greater tonnage was demanded the jordan design was improved. The demand for more tonnage makes us wonder what is the next best step to take. Is it advisable to still further increase the size and capacity of equipment or to add further units of the present size to the process?

Status of the Rod Mill

Our contact with those having experience in the industry leads us to believe that, at least from present indications the sizes being used are great enough and it is better to add more units than to further increase the size of those being used, or possibly devise better methods than the ones now in use. With this thought in mind we feel that there is a tendency to give a great deal of study to the rod mill. Since the rod mill is rather new in the paper industry, there is very little that can be said from experience concerning the results that are to be expected, but I feel that the machine has considerable merit. My experience in past years has been that a great many paper makers have seemed to envy the European mills in the use of the old kollergang and I think in many cases they would have turned it to their use if it were not for the matter of capacity, space and speed. The old kollergang is a very slow cumbersome machine and to install enough of them to keep up with any present day requirements would require a 10 acre lot and it is a difficult job to get drives over such an area. The action of a rod mill is apparently as nearly similar to the kollergang as is possible and still have equipment of suitable capacity. What little experimenting has been done with rod mills has not gone far enough yet to give much data that will tell us to what extent it will displace beaters or jordans.

Recent experiments were conducted with a rod mill at the Forest Products Laboratory which showed that consistency has a great influence on the Mullen test of fibers treated. Starting with 4.5 consistency, the Mullen test strength factor, points per pound ranged from .514 to .607 for a consistency of 7.32 which was high point and from there on up to 9.29 there was a drop to .579. The strength factor for this particular stock before entering the mill was .385. To treat 17 tons in 24 hours in this mill required 70 horsepower to raise the factor .222, while the use of a 1,000 pound beater using 100 horsepower only raised the test factor .075; then by the use of the jordan with 100 horsepower gave an additional increase of .115, or for the 200 horsepower used, a total increase of .190. The combination of a rod mill, two beaters and one jordan requiring 245 horsepower raised the test to .880. These figures show what can be done with a rod mill on certain grades of pulp at a given rate but since the point is conceded that pulp is not uniform, we can't set up a table like this that could be used for anything more than a guide.

Practical Considerations

Possibly some time in the future some one can work out a combination of freeness and consistency regulators which will control pulp preparation to such an extent that the power applied to a jordan can be controlled automatically but until that time I do not see what else can be done than to watch the sheet and set the jordan by hand to whatever power requirements are necessary to get the characteristics wanted in the finished product.

The other day one mill gave me a point which I would like to pass on to you. In discussing this subject with the superintendent, he said he was not interested in the amount of power used on his jordan nearly as much as he was in the reading of his vacuum gage. He then proceeded to show me power readings taken from his jordan which showed a variation of as much as 30 per cent due to changing the "setting up" of his jordan to maintain a uniform reading on his vacuum gage. His years of experience have shown him that for a certain grade of paper if his gage goes down a half pound from a certain reading it is an indication that he is not getting the formation his product requires, therefore he must "set up" the jordan regardless of the power consumed. If he goes over the predetermined gage reading he always "backs off" his jordan and in that way saves power.

Without entering into any discussion of the various types of jordans and the relation of these types with respect to horse power per ton, I wish to state that in my opinion, design is a very definite factor in power consumption. We believe that rigidity, together with proper machining, makes for a freedom

[1] General Manager, Shartle Brothers Machine Company, Middletown, Ohio.

from vibration and therefore is the most important factor in the proper design of a jordan. This is especially true in regard to power required to accomplish a certain result. We recall one group of mills that had for years used eight jordans of an old type. About four years ago they purchased a large modern jordan and later they purchased several more. In spite of using larger jordans their total power consumption was lowered and their quality improved. The improvement in quality was so noticeable that competitive mills have followed their lead. Intelligent study of the proper type of fillings had a great deal to do with the success of these installations.

There are too many variables to set up any hard and fast rule in regard to the proper design of a jordan. Consistency of the stock is a vital factor. We have in mind a mill making sheets from a stock which has an extremely short, tender fiber. This sheet must be made stiff and must corrugate easily. This mill uses one jordan and has recently ordered a second. The experience has been that jordaning at 7 per cent consistency has given them the best results. There are a very few mills jordaning such heavy stock. Their maximum production is 30 tons of nine point board and their maximum power consumption is 185 horse power. There are no beaters ahead of their jordans. When jordaning at 3 per cent the results are all together different and not at all satisfactory. Originally this mill discharged from the top of the jordan, but experiments showed that better results could be obtained by raising the discharge head. They are now carrying a 16-foot head which, for their particular stock, gives the best results. In this particular installation they are doing a thing that is contrary to the usual practice, and that is to set this jordan with the outlet valve closed so that the meter indicates a certain horse power, and then after starting the stock through the jordan, they regulate the amount of stock until the meter shows a certain reading. They try to maintain horsepower at this point. I believe that this experiment has proven to them that this particular jordan, at a certain horse power reading on a given amount of fiber, is capable of producing the desired results and that they cannot increase the quantity and possibly the horse power and expect to get the same results.

Another reason why a table of horse power per ton per hour cannot be compiled is that thus far there has been no attempt made to standardize on filling sizes used in a jordan. In a great many instances a mill is equipped with a jordan of a general utility nature for the making of a very wide range of kinds and weights of paper. In some instances the jordan runs under capacity while in other cases it exceeds the capacity rating. The jordan is, of course, expected to accomplish the same results in both instances.

When the Jordan was originally introduced it was found to do its best work at about 450 r. p. m. for the then recognized standard sizes. As newer and larger jordans were introduced the custom continued to be to use them at about 450 r.p.m. rather than at a speed to give a desired peripheral speed. With the advent of motor drives about 450 r.p.m. continued to be used due to the excessive cost of lower speed motors. I think that the time is rapidly approaching when the technical men of the paper industry will experiment and probably find that jordans should be driven by a variable speed motor to take advantage of the horse power savings that will be made possible. It is just as sensible to run a paper machine with a constant speed drive as to continue to run a jordan at a fixed speed as is now the practice.

Jordans in Tandem

We see in some particular instances a tendency to install small jordans in tandem instead of one large unit. In this way a more flexible control of the operation is obtained. In one kraft mill they have five in line which are fitted so that any one or more can be cut out as conditions demand.

In another case they have two sets of three jordans each in tandem. In cases such as this the horse power readings are very instructive because it is the only way in which you can attempt to compare the work accomplished by the varoius machines. A similarity of horsepower readings, however, does not mean that the two machines are doing exactly the same work on the fibers.

More Variables Are Considered

There are a great many influences which must be considered in relation to power measurements on a jordan and their proper interpretation. Some of the things which are likely to vary are the width of the knives, the amount of clearance of the knives above the woods, the speed at which the plug runs, the method of controlling the discharge from the machine, and the consistency of the stock. Unless all these things are practically identical in the jordans compared the effect produced on the fibers by the application of the same power to the two machines will be quite different.

I should like to relate an instance of a mill that had a machine built to operate at a certain speed and as is frequently the case it was soon running at twice this speed. They probably desired to run it even faster but this power was insufficient and deterred them. To endeavor to solve their problem they planned to spend about $20,000 to put a new drive on the machine to run it at this higher speed with the power available. Then the trouble. The drive was the old type with a constant speed engine and a variable speed change. It was found that as the speed was increased beyond the speed change possibilities, the engine had been stopped up with a consequent increase in jordan speed. This in itself brought about a great increase in power consumption but the main trouble was found to be caused by the jordan outlet. At the time of making some changes around the machine the outlet pipe was evidently in the way and was raised about twenty feet. Jordans are, of course, very inefficient pumps. After returning the jordan to its proper speed and decreasing its necessity to act as a pump there was a decrease of 140 horse power in the power requirements.

To formulate such a chart it will be necessary to do much experimental work to determine the following as a basis from which to work .

Pulps to be used for a common purpose will have to be produced in a more uniform condition. We will have to determine just how much treatment will need to be given in the beater or similar piece of equipment to get the desired results. When these standards have been determined we will have a starting point for studying the jordan.

Horsepower measurements will have to be based on the size or capacity of the machine, the speed at which it is run, the thickness and clearance of the knives, together with the spacing, the height of the discharge and inlet, and many other factors.

Up to now there has been no opportunity to make long and exhaustive tests along this line, but in the government laboratories, I hope to see the day come when at least some of these manufacturing problems can be taken up with these engineers and then we can measure the influence of these various conditions on the finished product.

We have been quite handicapped in that we are not experienced paper makers, neither have we a paper mill in which to conduct this research, while you men have been too busy with your mill problems to give the necessary time to this one particular problem. I believe, however, that the Forest Products Laboratory can work out some of these problems for us if we could make the proper arrangements.

You, as paper makers, could have a committee, and we, as machinery builders, another committee, and the two could make suggestions based on past experience which I think would be quite valuable in determining certain standards and as a basis to make recommendations as to the proper way to fill and handle a jordan to get the optimum results at possibly certain fixed horse power input values.

Section of the

COST ASSOCIATION OF THE PAPER INDUSTRY

Affiliated with

THE AMERICAN PAPER AND PULP ASSOCIATION

Conducted by THOS. J. BURKE, C.A., Sec-Treas

What Price Management?*

By J. P. Jordan, of Stevenson, Harrison & Jordan

To come directly to the point, (because we are given only a short time to talk) the main point is the psychology of the situation. All methods, budgets, standard costs or predetermined costs, are contributory to the psychology of the situation. I also believe that the trick title "What Price Management?" comes right up to the same point. What is meant by "What Price Management?" I didn't know they were going to use that name, because that is only the trick name at the head of a title of an article, and that is onoly part of the title. But the method of paying management, and the method whereby management receives its remuneration from the company, is to my mind one of the most important things today. And what I mean by management are all men including superintendents and foremen who contribute to the management of the company. I do not mean to stop with the president and the general manager or anything of that sort.

Cost Methods in 1903

A peculiar thing about this subject is that twenty-five or twenty-six years ago my first work, after I was obliged to leave direct engineering work on account of an illness which gave me only one leg to use instead of two, I took up cost work, away back in 1902, and starting in 1903 I put my whole time into it. And believe me, some of the cost methods we put up in 1903 were wonders. You ought to see them. I have some of them in a letter press, and that is a good place for them. You would not know them today. But that was a part of the evolution, and had to be gone through. And as time went on and we got up to 1906, 1908 and 1910, and lots of cost methods were put in by lots of people including myself, and at least I thought that mine were pretty good.

A Pioneering Job

Yet, some did not stick. Some of them stuck and some did not. One of them has stuck, however, since 1907, and I cannot get them to change. A lot of you men buy goods of the firm I have in mind and are using their machinery. That is the Waterous Engine Works, in Canada. I have tried to get Mr. Waterous to see that their methods might be out of date now, having been put in in 1907, but he claims it is working all right. That is one of the pioneering jobs on standard departmental burdens.

Systems That Did Not Stick

Many of the systems did not stick, however, and I made a study of why they did not stick. I wanted to find out whether the trouble was with me or with the company. I studied the set-up, and that led, step by step, into a study of how the organization of a company was set up. And covering a good many years of that kind of research, and following up cost installations, it led to the conclusion on my part, at least in so far as the work that I have been connected with was concerned, that while the cost methods were not all that could be desired by any means, that it was not a matter of cost methods after all; it was because the companies were not properly organized and properly set up to use any old kind of figures at all; that there were no definite responsibilities, and that the personnel of the organization were stepping on their own toes, were getting mixed up all the time, were crossing duties, were crossing responsibilities; that when a cost was set up for power, we will say, which Mr. Wellington referred to, there was no one particularly responsible for the power, to give thought to it. In other words, it was an inherent fault within the organization itself. And all the cost methods of any kind or description on the face of the earth would not have amounted to anything at all because nobody was responsible for that particular child.

A Matter of Course

I think that there is no question that, not only in the paper industry but every industry, it is an absolute fact that the power cost of a company is taken as a matter of course, a necessary evil; but if management would put somebody directly responsible for that and make a scientific study, a great deal of money could be saved, not only in the paper industry but in any industry whatever.

The Matter of Responsibility

That comes right back again to this matter of responsibility. And so that I won't run over the short time allowed by order of the boss who came around here a while ago, I am going to say that there are two things that enter into that responsibility. One is the proper setting up of the organization in the first place —not an organization of Bills and Jims and Harrys, who have grown up from small beginnings, and in the old days of necessity absorbed certain duties, and if Bill could not see to it then Jim would see to it, with the result that the under-employes of the concern never knew who was their chief or boss anyway. Set that against organizing a business with a definite fixation of responsibility, with an organization set-up from the standpoint of what the business needs from a mechanism of organization,

*Delivered at the Cost Association of the Paper Industry Convention, Waldorf-Astoria, New York, February 22.

if you please, and then pick your personnel out as best you can to fill it. Of course in filling it you may have to alter your ideal plan of organization a little—sometimes more; but in the main, you would follow out and at least you would be certain that there would be no dispute, no haziness whatever about who was responsible for this, that and the other function or duty in the company.

Leave No Doubt of Responsibility

All right. First of all get your organization set up right so that there is no doubt of responsibility. Then be certain that your cost methods fit that organization. Be sure that somebody, in other words, if you want to reverse it, is responsible for every cost statement that there is, whether it is power, or any other part of the conversion cost which you may have, your selling or anything of that kind. Be sure first, of the responsibility, and second, that you have intelligent figures to back up that responsibility.

Method of Remuneration

Now we come along to the subject we are going to talk, about, and that is—"What Price Management?" I would say that I have become thoroughly convinced that next to the proper fixation of duties, that the most important thing today is the method of remuneration of management from the top down through—if you please, all the way down through to the office boy and the lowest worker. I am omitting the plant operations because as far as the direct work is concerned a great deal has been done in standard times, in bonus incentive plans, and all of that, in the direct operations. Much less has been done in connection with the indirect operations, and it takes a pretty large plant, possibly, in a good many cases, to do a good deal about that as far as the workers and laborers are concerned. But it is not a difficult thing to tie that up to the foremen and superintendents who are responsible for that work, and there we will start in this discussion of "What Price Management?"

Adjusting Salaries

I claim this: that in setting up a key man and executive bonus plan, which I believe should hold in every plant, that the salaries should be adjusted on the basis of what anyone needs to live on in the style and on the plane required by his position and desired by his position, covering all the necessary expenses including education, children, and everything of that sort, with a little margin whereby a man is absolutely free from worry on paying his bills. Beyond that, I believe that the remuneration of such men should be on some basis just as closely hooked up as a reflection of the excellence of his performance, in some participating plan, either through holding costs where they are, or bettering costs, in the cases of foremen and superintendents; to participation in profits and a division of profits as between the capital and the management, in the case of executives. That will include the sales department.

Sales Department Should Be on Quota Basis

I take no issue with what Mr. Wellington said, but I do believe that a sales department,—in fact, we would agree that in the sales department it should be on a quota basis, some method of remuneration giving him a salary first and then added remuneration on the basis of goal, par or quota set for his work, either bringing in profit or not, in accordance with how you are running your business, and how tight a control you have on it. There are lots of businesses where you cannot divide profits because there are not any. In that case you have to do something else. And when you get to the executives, it might be on the basis of the division of profits according to the responsibility which each one holds, as to the producing of profits.

Now, in that point there your salaries might be pretty close together. The sales manager may be pretty close in salary to the general manager. But when you come down to apportioning the profits of the business, the general manager may in lots of businesses have a much larger division of profits than the sales manager would have. You may think that a queer thing, but it is not queer, from this standpoint: that those two men may be required to live at somewhere near the same plane; and remember, we have only gone up to the plane of cost of living so far in our remuneration plan. But it must be admitted that in the majority of businesses the general manager of the business has certainly far more responsibility for the producing of profits than the sales manager has, or the manufacturing manager, and lots of others.

Relative Values of the Men

For instance, if you start in with the general manager at one hundred points, and the sales manager and manufacturing manager at say seventy-five points, and perhaps the treasurer or comptroller or someone else at sixty or fifty points, you can take relative values of the men in their responsibilities and their opportunities to influence profits. I have known of cases where men on account of length of service may have perhaps a higher salary than some others, but when it comes down to the profit and bonus distribution, they may have a lower scale than somebody who may get a lower salary.

Secret of Success in Industry

What I want to get at is this: That I am convinced absolutely that the secret of success in industry today is the planning out of methods whereby (and I believe this is a downright duty of a chief executive or any other kind of executive, to give great thought to) every possible man can be put on an incentive basis, in order to get the benefit of the enormous pressure of the psychology of the individual ownership, where every man will have the feeling, "This is my business," where he will think, "I am just as much in business alone as if I owned this sales department"—or "this filing room," if you please, away down in the plant, or a department in the sales department.

Stop and think of men on a salary in the sales department, who are away off somewhere from headquarters, and there are fifty or sixty of those men and only one sales manager's job. It stands to reason that if you want those men to stay with you, you have to put up some kind of a method that will let them cut loose.

Don't Limit Bonuses

Another point: The time is so limited that I can only sum up and touch these things that are very close to my heart: Don't limit bonuses. Above all things, if anybody can quadruple their salary, let them do it. Why? Because you must know enough about the basis that you set your bonus on, that you do not care how big a bonus they make, particularly out in the sales department. I remember in a western company that bonuses were set, and two or three of the divisions cut loose right, with the result that they were making bonuses alone that were bigger than the salaries paid the assistant sales managers of the company. There was a great to-do about it, and a meeting was held, and lots of things were said at the meeting, and the final upshot was that the chief executive said to the assistant general sales manager, "Well now, if you feel that way about it, we would suggest that you take one of the field jobs." Why? Because these men scattered out from headquarters got the spirit, and mind you, the selling cost went down just as sharply as their bonuses went up. They got the spirit of that work and they did not only the regular amount of work but they did super-human work, work beyond which no executive dares or has a right to ask anybody to carry out.

Participation of Executives

Why do we get Congressional medals, or any kind of medals in war? Notice the wording of it. It is for the performance of duty *beyond* that which is expected from anyone. It is the same thing with bonuses and bonus incentives. Furthermore, you will find in the participation of executives in bonuses, that the per-

centages should go up. For the first million dollars it should be five per cent. (figures mean nothing here) and for the next half million it will be seven and a half per cent., and for the next half million ten per cent. and so on.

You will find that a lot of executives will hold their hands up in holy horror, for many people say that the percentages should go down, and stop finally. But I want to ask, what right has anyone to expect capital, the inert capital in the business, entirely impotent without management, to get an ascending rate of profit? They are getting the bulk of it anyway. And then you set aside only five or seven and a half per cent. for management? What is the argument for capital to get an ascending rate of profit? Well, those high rates you will say only come in good economic conditions when business comes easy. But nevertheless, if the executives of a company are not on to their jobs in good business times, the other fellow is going to take it away from them just exactly as much as in bad times.

In poor times the executive force and sales force have to be on the job every minute, and when good business times come they have to be there to get the business or the other fellow will get it. So therefore the performance of management is just the same. And if that is so, and if endeavor beyond the average or beyond that which you should normally expect is necessary to get the business and run the profits of the company up, why cut out all interest by cutting down the bonus when it reaches fifty per cent. or one hundred per cent. of the salary, as executives have advocated?. I cannot see it. I know lots of executives have done it, and it has not been the stockholders either.

The stockholders make the biggest profit anyway, so I am saying this: I believe the greatest thing in industry today, or mercantile business, is the psychology, the spirit, within each executive, that is going to bring out endeavor far beyond the normal.

Now, oudgeting is necessary. Naturally they cannot do their work unless backed up with those figures. But before we get to that, give me first the organization which has a personal interest in every move that is being made, without a figure, as against an important organization, disorganized, without a spirit of drive in them, with all the figures on the face of God's earth. (Applause)

Changes in Administrative Practice

Of Revenue Act of 1926 Agreed to By Ways and Means Committee

With the exception of a few items of minor interest, the Ways and Means Committee has completed consideration of the changes in the administrative sections of the Revenue Act proposed by the Joint Committee. Their time is now being devoted to the revision of the rate schedules in executive session.

There follows a synopsis of the decisions of the Ways and Means Committee on administrative changes made recently.

The Committee rejected the proposal of the Joint Committee that the present complicated methods of computing earned income be eliminated and a deduction equal to 10% of the amount of earned net income, subject to maximum and minimum limits equivalent to those fixed by the present act, be allowed. Many alternatives were discussed but the Committee agreed to retain the present provisions of the law for another year at least.

Capital Gains and Losses

The Joint Committee recommended that no change be made in the present law with respect to the taxation of capital gains and credit allowance for capital losses. These suggestions were accepted by the Committee.

Evasion of Surtaxes by Incorporation

It was agreed to amend section 220, relating to evasion of surtaxes, by providing in substance as follows:

1—That personal holding corporations shall be defined as corporations in which not more than ten stockholders hold 80% or more of the stock; and that at least 80% of the income must come from rents, royalties, dividends, interests and income of a similar nature.

2—Personal holding corporations will be allowed to accumulate 30% of their net income, including dividends, which will not be subject to tax under the section. A tax of 25% will be levied on the balance of accumulated earnings.

3—It is not the intention of the Committee that this tax shall apply against a holding company where deficits were incurred in previous years. The accumulation must be after previous deficits are taken into account.

The Joint Committee recommended that consolidated returns be treated the same as separate corporations, except that by mutual consent losses of one corporation may be offset against the income of another in the same taxable year. The Ways and Means Committee accepted the amendment in full.

Federal Tax Liens

The Ways and Means Committee agreed to the amendments on this subject submitted by the Joint Committee as follows:

1—Authorizing the release of a tax lien on the giving of a satisfactory surety bond by the taxpayer, in amount of not more than twice the tax due.

2—Providing for the issue of a certificate upon the release of an income tax lien, similar to the present procedure in estate tax cases.

3—Authorizing a lien against specific parcels of real estate or other property. Under the law a lien covers all the property and property rights of the taxpayer.

Basis for Determining Gain and Loss, Depletion and Depreciation

The Ways and Means Committee adopted the Joint Committee's proposal to amend section 204 (a) (5) so that the property at the "date of death" shall serve as the basis for gain, loss, depletion and depreciation rather than the time of "acquisition". An additional amendment was agreed to which would provide that a settlement agreed upon under the regulations then in force could not subsequently be set aside and the case reopened by the Government.

Interest on Overpayments and Underpayments

The Committee accepted the recommendations of the Joint Committee that interest be paid by the Government up to 30 days before payment of the refund. The Joint Committee had pointed out that under present regulations taxpayers often lose interest on refunds for as much as eight months.

Closing Agreements

The Committee accepted the recommendation of the Joint Committee that section 1106 (b) be amended so as to authorize the Commissioner to execute an agreement as soon as settlement is actually reached with the taxpayer without waiting for the assessment or payment of the taxes.

Deductibility of Estate and Inheritance Taxes

The Committee accepted the recommendation of the Joint Committee that estates be allowed deduction of estate and inheritance taxes unless beneficiary can show that he has actually paid the tax or is liable for it.

The Committee accepted the recommendation of the Joint Committee authorizing the Commissioner to extend time for payment of any deficiency to two years. The present law allows 18 months.

The Committee adopted amendments relating to the procedure of the Board to the effect that a taxpayer who has had a hearing before a division of the Board cannot demand a hearing before the entire Board and that the Board shall decide cases on the record presented without being required to give additoinal testimony.

COST SECTION

Obituary

Edward A. Jones

PITTSFIELD, Mass., March 5, 1928.—The funeral of Edward A. Jones, prominent paper manufacturer, of 152 Wendell avenue, who died suddenly on February 29, was held at the First Congregational Church on March 2. He was buried in the Pittsfield Cemetery privately. The Rev. Hugh Gordon officiated.

The active bearers were Wallace E. Bardwell, Almon A. Bush, William R. Thomas, Frank G. Feeley, Henry W. Williams, W. B. Best, all of whom are in the employ of the E. D. Jones & Sons Company. The honorary bearers were Winthrop M. Crane, Jr., William A. Whittlesey, William L. Adam, Arthur W. Eaton, Frederic H. Rhodes, Fred T. Francis, William H. Gage, of Montclair, N. J., Henry A. Francis, Dr. Brace W. Paddock, Charles W. Power, Dr. Henry Colt and John Barker. The church quartet sang two selections, "The Strife Is O'er," and "Abide With Me."

Mr. Jones was born in East Lee, November 3, 1863, the son of Edward D. G. (Ardilla Herrick) Jones. He was three years of age when he came to Pittsfield. He was educated in the public schools of Pittsfield and at Peekskill Military Academy and from there went to the Massachusetts Institute of Technology, graduating in the class of 1887. Upon graduation he returned to Pittsfield and became associated with his father in the business, which now bears the name of the E. D. Jones Sons' Company.

Upon the death of his father in 1904 he assumed active control of the business, which from that day has enjoyed an uninterrupted growth under his direction. The plant is busier now than it has been at any other time in its history. Mr. Jones's only son, Charles E., was killed in the aviation service in France during the World War. Wallace E. Bardwell, assistant treasurer of the E. D. Jones Sons' Company, has been associated with Mr. Jones for 35 years.

For a long time Mr. Jones had been vitally interested in the House of Mercy Hospital. In 1923 he was chairman of the special gifts committee. The total amount raised in that memorable campaign was over $300,000.

Mr. Jones was president and treasurer of the E. D. Jones Sons' Company, vice president and a trustee of the Berkshire County Savings Bank; vice president and director of the Pittsfield National Bank and Trust Company; a director of the Berkshire Life Insurance Company; a trustee of the Western Massachusetts Companies; a director of the Keith Paper Company, of Turner's Falls; president of the Central Block Corporation, and a trustee of Deerfield Academy in Deerfield. He was a member of the Country Club of Pittsfield, the Engineers' Club of New York, the Park Club, of the Knights Templar, and of the First Church of Christ Congregational.

Charles Folwell Stewart

[FROM OUR REGULAR CORRESPONDENT]

NORTH WILBRAHAM, Mass., March 6, 1928.—Charles Folwell Stewart, aged 52 years, for the past 11 years superintendent of the Collins Manufacturing Company, the controlling interest of which is held by S. R. Whiting of Holyoke, died Monday, February 27, suddenly of heart failure. The Collins Mill is one of the largest mills manufacturing loft dried paper in the world. He was born January 13, 1876, in Weymouth, N. J., and learned the paper trade early, being associated with the Whiting Paper Company in this city for 25 years before going to North Wilbraham to succeed Hubert Whiting in charge of that mill, Mr. Whiting coming to the Whiting Company here. He was a 32d degree Mason and member of Newton lodge of Wilbraham and of the Community Men's Club.

Besides his widow who was formerly Miss Bertha Laverty, he leaves three sons, James L. Stewart of Hartford, Conn., Wilbur C. and John B. at home, and two brothers, William and James, of Newark, N. J., and a sister, Miss Fannie Stewart of Philadelphia.

Mr. Stewart first came to Holyoke in 1906 to the Norman Division of the American Writing Paper Company. He had learned the paper making trade in the Hamilton Paper Mills in that place. The following year he was made superintendent of the No. 2 mill of the Whiting Paper Company. The funeral was held Thursday afternoon with burial in Forestdale Cemetery, this city.

Louis C. Newman

[FROM OUR REGULAR CORRESPONDENT]

INDIANAPOLIS, Ind., March 5, 1928.—Dispatches from Buffalo, N. Y., containing the announcement of the death of Louis C. Newman came as a shock to many friends in Kokomo and other cities of north central Indiana where he was well known in the paper trade. At one time he was active in the paper mill business in that section. Nearly forty years ago he went to Kokomo and became connected with the Kokomo Wood Pulp and Paper Company, one of the industries acquired in that city during the days of cheap natural gas. The company had its mill in the southwestern part of the city. He left Kokomo about 35 years ago, but is well remembered by many of the city's older business men.

Charles H. Mohan

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., March 6, 1928.—Charles H. Mohan, for the past three years western representative of the L. L. Brown Paper Company of North Adams, died Thursday night at the home of his father-in-law, Patrick J. Cray, 1615 Northampton street. He was a charter member of the Ausable Forks, N. Y., Knights of Columbus. The funeral was held Monday morning.

Warren Mfg. Co. Installs Machine at Milford

[FROM OUR REGULAR CORRESPONDENT]

MILFORD, N. J., February 27, 1928.—The Warren Manufacturing Company has just completed improvements at its plant here to increase its output of "Riegel's" glassine paper. This company is the largest manufacturer of glassine in the United States.

The Milford plant previously contained four paper machines, all devoted to the manufacture of glassine. The enlargement provides a fifth machine in a new machine room large enough to house a sixth machine as well.

The additional paper machine necessitated the enlargement of the finishing department where the glassine paper receives its final treatment on the supercalenders and is cased for shipment. It was also necessary to increase the shipping facilities, so new railroad sidings were constructed, permitting the loading of four cars of paper within the mill building.

For some purposes glassine paper should be treated with a wax coating to make it absolutely moisture and grease-proof. For this process a new converting department building was constructed. With adherence to the idea of straight line production, this building was erected next to and adjoining the new extension of the finishing room. This building is large enough to accommodate the present waxing and printing equipment with room for future additions.

The idea of straight line production has been followed throughout as the most economical and practical method for the manufacture and converting of the company's product.

Steady and reliable labor is assured by the construction of homes for employees on the company's property, every care having been taken to make these homes and the community in general as pleasant and comfortable as possible.

The Warren Manufacturing Company manufactures at its Warren, Hughesville and Riegelsville plants, "Riegel's rope and jute papers," a wide variety of specialties used largely for industrial purposes.

Design and construction of the Milford plant extensions were by the H. K. Ferguson Company of Cleveland.

ALPHA FIBRE

Uniform Quality

Alpha takes the place of most grades of rags in the making of fine papers. Its absolute regularity and greater purity maintain your high standards.

Brown Company
PORTLAND, MAINE.

ENGINEERS

Power plants—additions—complete paper mill projects

ONE great organization—a specialist in paper mill engineering and construction—designs, builds, rebuilds, reports, appraises, for many of the most important concerns in the paper industry. Plans, price, construction work, delivery date, owner's satisfaction, all guaranteed.

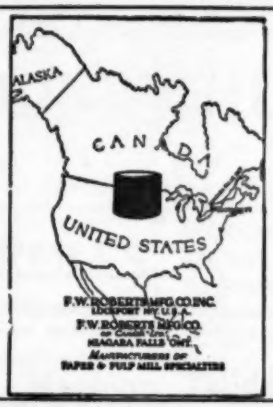
Ferguson customers include:

Hinde & Dauch Co. — Spencer-Wynne Paper Products Company
A. P. W. Paper Co. — Bennington Wax Paper Company
Mead Pulp and Paper Co. — Oswego Falls Corp.
Chillicothe Paper Co. — Fairfield Paper Co.
Warren Mfg. Co.

THE H. K. FERGUSON COMPANY
Hanna Bldg. • Cleveland, Ohio • Phone: SUp. 3620
New York • Detroit • Birmingham • Tokio, Japan

Ferguson
ENGINEERS

B U R R S



B U R R S

C. K. WILLIAMS & CO.
ANCHOR BRAND
DRY COLORS AND FILLERS
EASTON, PA. U.S.A.

Red
Brown
Yellow
} Oxides

Talc
Yellow Ochres,
Umbers, Agalite

C. K. Williams & Company
EASTON, PA.

THERMO-COMPRESSORS

will boost exhaust steam from 5 to 10 lbs. pressure to 20 or 30 lbs. pressure for paper dryers.

They operate with live steam, entrain exhaust steam, and discharge at pressures suitable for above service. They use up exhaust steam, reduce consumption of live steam and eliminate reducing valves.

Send for Bulletin 4-F.

Schutte & Koerting Co., 1255 N. 12th Street, Philadelphia, Pa.

Imports of Paper and Paper Stock

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING MARCH 3, 1928

SUMMARY

Cigarette paper .....122 cs.
Wall paper .....196 bls., 1 roll, 10 cs.
Paper hangings ..... 101 bls., 75 cs.
News print .....951 rolls, 44 bls.
Printing paper .....56 rolls, 187 cs.
Wrapping paper .....31 cs.
Packing paper .....20 cs.
Pergamyn paper .....42 cs.
Baryta coated paper .....137 cs.
Metal paper .....34 cs.
Gold coated paper .....4 cs.
Photo paper .....1 cs.
Cover paper .....5 cs.
Filter paper .....182 bls., 84 cs.
Drawing paper .....67 cs.
Decalcomania paper .....51 cs.
Writing paper .....14 cs.
Gallic paper .....1 cs.
Tissue paper .....66 cs.
Strawboard .....938 rolls, 720 pkgs.
Miscellaneous paper ..... 7 rolls, 664 bls., 139 cs.

CIGARETTE PAPER

P. Lorillard & Co., Bankdale, Marseilles, 100 cs.
British American Tobacco Co., Carmania, Liverpool, 22 cs.

WALL PAPER

R. F. Downing & Co., Bolivian, London, 29 bls., 4 cs.
F. A. Binder, Berlin, Bremen, 11 bls.
W. H. S. Lloyd & Co., Carmania, Liverpool, 5 bls., 2 cs., 1 roll.
F. J. Emmerich, Albertic, Liverpool, 10 bls., 1 cs.
F. J. Emmerich, Port Nicholson, London, 10 bls.
F. J. Emmerich, Westphalia, Hamburg, 48 bls.
J. E. Bernard & Co., Westphalia, Hamburg, 22 bls.
Globe Shipping Co., Westphalia, Hamburg, 71 bls., 3 cs.

PAPER HANGINGS

Whiting & Patterson Co., Inc., Berengaria, Southampton, 30 cs.
A. C. Dodman, Jr., Inc., Carmania, Liverpool, 11 cs., 3 bls.
A. C. Dodman, Jr., Inc., Albertic, Liverpool, 23 bls., 5 cs.
W. H. S. Lloyd & Co., American Farmer, London, 75 bls., 29 cs.

NEWS PRINT

Parsons & Whittemore, Inc., Berlin, Bremen, 308 rolls.
Perkins, Goodwin & Co., Berlin, Bremen, 532 rolls.
Journal of Commerce, Odensholm, Hango, 111 rolls.
National City Bank, Westphalia, Hamburg, 44 bls.

PRINTING PAPER

Walker Goulard Plehn Co., Berlin, Bremen, 110 cs.
National City Bank, Berlin, Bremen, 70 cs.
Keuffel & Esser Co., Westphalia, Hamburg, 6 cs., 56 rolls.
R. F. Downing & Co., Westphalia, Hamburg, 1 cs.

WRAPPING PAPER

E. Dietzgen & Co., Grootendyk, Rotterdam, 31 cs.

PACKING PAPER

Haule Wax Paper Manfg. Co., Westphalia, Hamburg, 20 cs.

PERGAMYN PAPER

F. C. Strype, Westphalia, Hamburg, 27 cs.
E. V. Hadley, Westphalia, Hamburg, 15 cs.

BARYTA COATED PAPER

Globe Shipping Co., G. Washington, Bremen, 137 cs.

METAL PAPER

Hensel Bruckman & Lorbacher, G. Washington, Bremen, 34 cs.

GOLD COATED PAPER

F. Murray Hill, Berlin, Bremen, 4 cs.

PHOTO PAPER

J. H. Schroeder Banking Corp., Berlin, Bremen, 1 cs.

COVER PAPER

International F'd'g Co., Westphalia, Hamburg, 5 cs.

FILTER PAPER

E. Fougera & Co., La Bourdonnais, Bordeaux, 80 cs.
New York Trust Co., La Bourdonnais, Bordeaux, 51 bls.
H. Reeve Angel & Co., Inc., Alaunia, Southampton, 4 cs.
J. Manheimer, Alaunia, Southampton, 131 bls.

DRAWING PAPER

Keuffel & Esser, Alaunia, Southampton, 1 cs.
Keuffel & Esser, Westphalia, Hamburg, 26 cs.
International F'd'g Co., Caucasier, Antwerp, 40 cs.

DECALCOMANIA PAPER

L. A. Consmiller, G. Washington, Bremen, 4 cs.
C. W. Sellers, G. Washington, Bremen, 24 cs.
B. F. Drakenfeld & Co., Carmania, Liverpool, 23 cs. (duplex).

WRITING PAPER

Japan Paper Co., Leviathan, Southampton, 3 cs.
Guibout Freres, Berengaria, Southampton, 11 cs.

GALLIC PAPER

Keuffel & Esser Co., Alaunia, Southampton, 1 cs.

TISSUE PAPER

Brooks Paper Co., Carmania, Liverpool, 7 cs.
F. C. Strype, Carmania, Liverpool, 17 cs.
G. Ottro, Carmania, Liverpool, 5 cs.
F. B. Vandegrift & Co., Carmania, Liverpool, 10 cs.
Schenckers, Inc., Westphalia, Hamburg, 35 cs.
G. W. Sheldon & Co., American Farmer, London, 2 cs.

STRAW BOARD

Perkins Goodwin & Co., Grootendyk, Rotterdam, 308 rolls
A. B. Massa Corp., Grootendyk, Rotterdam, 720 pkgs.
A. Vuyk, Grootendyk, Rotterdam, 630 rolls.

MISCELLANEOUS PAPER

The Surbrug Co., Oklahoma, Havre, 20 cs.
Wilkinson Bros. & Co., Grootendyk, Rotterdam, 5 cs.
Steffens Jones Co., Grootendyk, Rotterdam, 35 cs., 7 rolls.
Annex Manfg. Co., Grootendyk, Rotterdam, 4 bls.
Japan Paper Co., M. Calvo, Barcelona, 2 cs.
H. Reeve Angel & Co., Inc., Port Nicholson, London, 9 cs.
Walker Goulard Plehn Co., Westphalia, Hamburg, 660 bls.
Tamm & Co., Luossa, Hamburg, 6 cs.
R. Wilson Paper Corp., Cameronia, Glasgow, 32 cs.
Perry Ryer & Co., Cameronia, Glasgow, 30 cs.

RAGS, BAGGING, ETC.

Equitable Trust Co., Oklahoma, Havre, 28 bls. new cuttings.
Fidelity Trust Co., Oklahoma, Havre, 101 bls. bagging, 33 bls. rags.
Overton & Co., Oklahoma, Havre, 379 bls. baggings.
American Exchange Irving Trust Co., Oklahoma, Dunkirk, 70 bls. bagging.
Burnside & Cooper, Oklahoma, Dunkirk, 75 bls. flax waste.
E. J. Keller Co., Inc., La Bourdonnais, Bordeaux, 42 bls. rags.
Castle & Overton, Inc., La Bourdonnais, Bordeaux, 162 bls. rags.
N. Y. Trust Co., La Bourdonnais, Bordeaux, 252 bls. rags; 92 bls. bagging.
Chemical National Bank, La Bourdonnais, Bordeaux, 152 bls. rags.
A. W. Fenton, Inc., G. Washington, Bremen, 54 bls. rags.
Darmstadt, Scott & Courtney, G. Washington, Bremen, 60 bls. bagging.
E. J. Keller Co., Inc., Belfast Maru, ——, 396 bls. rags.
N. Y. Trust Co., Grootendyk, Rotterdam, 143 bls. rags.
Darmstadt Scott & Co., Grootendyk, Rotterdam, 55 bls. bagging, 25 bls. cotton waste.
Katzenstein & Keene, Inc., Bolivian, London, 64 bls. paper stock.
National City Bank, M. Calvo, Barcelona, 106 bls. rags.
Castle & Overton, Inc., M. Calvo, Barcelona, 168 bls. rags.
Castle & Overton, Inc., Westerner, Antwerp, 80 bls. rags.
E. Butterworth & Co., Inc., Westerner, Antwerp, 172 bls. rags.
A. H. Searle, Inc., Westerner, Antwerp, 302 bls. rags.
Equitable Trust Co., Alaunia, Southampton, 18 bls. rags.
L. Leibowitz, Carmania, Liverpool, 28 bls. rags.
Manufacturers Trust Co., Carmania, Liverpool, 27 bls. rags.
H. Burrows, Carmania, Liverpool, 14 bls. rags.
W. Schall & Co., Caucasier, Antwerp, 78 bls. thread waste.
A. W. Fenton, Inc., Westphalia, Hamburg, 47 bls. rags.
Castle & Overton, Inc., Westphalia, Hamburg, 28 bls. rags.
E. J. Keller Co., Inc., Luossa, Hamburg, 11 bls. rags.
State Bank, Luossa, Hamburg, 19 bls. rags.
Amtorg Trading Corp., Luossa, Hamburg, 3 bls. rags.
American Exchange Irving Trust Co., Luossa, Hamburg, 71 bls. rags.
Chase National Bank, Luossa, Hamburg, 211 bls. rags.
A. H. Searle, Inc., Cameronia, Glasgow, 352 bls. paper stock.
Brown Bros. & Co., Cameronia, Glasgow, 46 bls. rags.
E. J. Keller Co., Inc., West Carnifax, ——, 168 bls. rags.

OLD ROPE

T. D. Downing & Co., Bolivian, London, 22 coils, 50 bls.

CASEIN

National City Bank, Western World, Buenos Ayres, 667 bags.
1st National Bank of Boston, Western World, Byenos Ayres, 834 bags.
Hannover National Bank, Western World, Buenos Ayres, 417 bags.

CHINA CLAY

L. A. Salomon & Bros., Albertic, Liverpool, 160 bags.

WOOD PULP

Price & Pierce, Ltd., Titania, Wallvik, 4050 bls. sulphite.
Atterbury Bros., Inc., United States, Oslo, 500 bls., wood pulp.
A. P. W. Paper Co., Facto, Sheet Harbor, 7937 bls. wood pulp, 887 tons.
Castle & Overton, Inc., Westphalia, Hamburg, 300 bls. wood pulp, 45 tons.

WOOD PULP WADDING

Birn & Wachenheim, Grootendyk, Rotterdam, 50 bls.

BOSTON IMPORTS

WEEK ENDING MARCH 3, 1928

Green Hamilton & Co., Westerner, Antwerp, 59 bls. cotton waste.
Eliot Mills, Westerner, Antwerp, 94 bls. cotton waste.
Buck Kiaer & Co., Inc., Odensholm, Stockholm, 900 bls. wood pulp.
American Exchange Irving Trust Co., Odensholm, Helsingfors, 150 bls. wood pulp.
J. Carter & Co., Odensholm, Helsingfors, 118 bls. news print.
The Borregaard Co., Inc., Odensholm, Gothenburg, 600 bls. wood pulp.
Johanson Wales & Sparre, Inc., Odensholm, Gothenburg, 260 bls. sulphate.
Scandinavian Pulp Agency, Inc., Odensholm, Gothenburg, 1397 bls. sulphite.
J. Anderson & Co., Odensholm, Gothenburg, 1875 bls. sulphite.
Parsons & Whittemore, Inc., Odensholm, Gothenburg, 450 bls. wood pulp.
A. P. W. Paper Co., Facto, Sheet Harbor, 7937 bls. wood pulp, 887 tons.
Bulkley Dunton & Co., Binnendyk, ——, 500 bls. wood pulp.
Castle & Overton, Inc., Boschdyk, Holland, 191 bls. wood pulp.
Castle & Overton, Inc., Natirar, Germany, 79 bls. rags.
E. J. Keller Co., Inc., Boschdyk, Rotterdam, 58 bls. rags.
E. J. Keller Co., Inc., Seattle Spirit, Hamburg, 100 bls. rag pulp.
E. J. Keller Co., Inc., Dakotan, ——, 400 bls. rags.
E. J. Keller Co., Inc., Natirar, Hamburg, 242 bls. rags.
E. J. Keller Co., Inc., Tijuca, Antwerp, 89 bls. old rope.

NORFOLK IMPORTS

WEEK ENDING MARCH 3, 1928

National City Bank, Sacandaga, Antwerp, 183 bls. bagging.
British American Tobacco Co., Sacandaga, Antwerp, 100 cs. printed cigarette wrappers.

CHARLESTON IMPORTS

WEEK ENDING MARCH 3, 1928

Castle & Overton, Shickshinny, England, 177 bls. rags.

NEW ORLEANS IMPORTS

WEEK ENDING MARCH 3, 1928

E. J. Keller Co., Inc., Maasdam, Rotterdam, 182 bls. bagging.

(*Continued on page 72*)

GDC

If you plan to take up
the
Manufacture of

New Paper Specialties

or if you are confronted with color problems of any kind, such as fastness to light, fastness to alkali, two-sidedness, please consult our newly equipped laboratories and our experienced staff.

230 Fifth Avenue
NEW YORK

GENERAL DYESTUFF CORPORATION

RODNEY HUNT

Adopted as standard by prominent mills

Your Machine Tenders are safer—when your paper machines are equipped with RODNEY HUNT "Shaf-tite" Rolls. These rolls have **smooth ends.** No projections to catch fingers or oil can.

RODNEY HUNT

If you need a ROLL for any MACHINE call or write

RODNEY HUNT MACHINE CO.
63 Maple St., ORANGE, MASS.

THE PULP BUYER
WILL TELL YOU WHY

Fidalgo System Dried and Shredded Pulp
(Air Dried)

IS THE ANSWER

Units 10 to 75 ton daily capacity
Producing a compact air dry bale (suitable rail and water shipment 40-45 cu. ft. per ton) of *shredded* pulp.
Higher test than when dried on cylinder machines.

LARGE SAVING AT BEATER

GENERAL ADVANTAGES

No Mechanical Pressure used until dry—upon cutting straps at Beater entire bale allowed to absorb rapidly. No surface pressure on wet pulp during drying process. Only current of warm dehydrated air, produces a product that has its surface pores wide open for ready absorption in Beater and produces a pulp testing from 10 to 30 points higher than any pulp dried in sheet form.

LABOR, STEAM, POWER, ETC.

LESS LABOR than any cylinder or mechanical pressure dryer.
Less than 3,500 lbs. steam required (either live or exhaust) per ton air dried pulp, with economizer pulp can be dried with waste stack gases.

CLEANLINESS

Pulp being dried in closed insulated compartment—FIDALGO SYSTEM produces cleaner pulp.

USERS

Eight installations in United States and ten on order or under construction.
Your inspection invited.

COST

Less than any Drying Method we know of to install.

Write Us for Particulars

Technical Economist Corporation
40 RECTOR STREET NEW YORK, N. Y.
Telephone Whitehall 5243 Cable HERENCO

TANKS

Blow Pits, Acid Storage Tanks, Vats, Etc.
Send us your specifications for prompt shipment
Kalamazoo Tank & Silo Co., Kalamazoo, Michigan

UNION TALC COMPANY
Finest Grades of Agalite
147 Nassau Street New York

Imports of Paper and Paper Stock

(*Continued from page 70*)

PHILADELPHIA IMPORTS

WEEK ENDING MARCH 3, 1928

H. M. Coffin & Co., Oklahoma, Havre, 59 bls. jute waste.
National Bank of Commerce, Oklahoma, Havre, 314 bls. rags.
E. J. Keller Co., Inc., Oklahoma, Havre, 176 bls. rags.
Fidelity Trust Co., Oklahoma, Havre, 148 bls. rags.
Bank of New York, Oklahoma, Havre, 127 bls. rags.
Equitable Trust Co., Oklahoma, Havre, 38 bls. rags.
French American Bkg. Corp., Oklahoma, Dunkirk, 125 bls. rags.
Bank of New York, Oklahoma, Dunkirk, 136 bls. rags.
W. Schall & Co., Oklahoma, Dunkirk, 125 bls. rags.
Goldman Sachs & Co., Oklahoma, Dunkirk, 276 bls. rags.
Salomon Bros. & Co., Westerner, Antwerp, 99 bls. rags.
M. Friedman, Westerner, Antwerp, 43 bls. rags.
Tradesmans National Bank, Westerner, Antwerp, 313 bls. rags.
Castle & Overton, Inc., Westerner, Antwerp, 312 bls. rags.
Phila. Girard National Bank, Westerner, Antwerp, 36 bls. rags.
Chase National Bank, Corson, Algiers, 118 bls. rags.
E. J. Keller Co., Inc., Corson, ——, 701 bls. rags.
2nd National Bank of Boston, London Exchange, London, 281 bls. rags.
Phila. Girard National Bank, London Exchange, London, 227 bls. rags.
J. Lang Paper Co., London Exchange, London, 488 bls. rags.
A. H. Searle, Inc., London Exchange, London, 179 bls. rags.
Bulkley Dunton & Co., Pacific, ——, 1000 bls. wood pulp.
Castle & Overton, Inc., Galtymore, Scotland, 117 bls. rags; 14 bls., 83 coils, old rope.
Castle & Overton, Inc., Westfalen, Germany, 89 bls. rags.
Castle & Overton, Inc., Boschdyk, Holland, 29 bls. rags.
Castle & Overton, Inc., Bristol City, England, 90 bls. rags.
Castle & Overton, Inc., Lehigh, England, 283 bls. rags.
E. J. Keller Co., Inc., Innoko, Rotterdam, 66 bls. old rope.
E. J. Keller Co., Inc., Savoia, ——, 113 bls. rags.

PORTLAND IMPORTS

WEEK ENDING MARCH 3, 1928

Waterfalls Paper Mills, Odensholm, Gothenburg, 1299 bls. wood pulp.
Atterbury Bros., Inc., Odensholm, Tofte, 3000 bls. sulphite.
Bulkley Dunton & Co., West Campgaw, ——, 1000 bls. wood pulp.

BALTIMORE IMPORTS

WEEK ENDING MARCH 3, 1928

Parsons & Whittemore, Inc., Carlsholm, ——, 180 bls. wood pulp.
Bulkley, Dunton & Co., Anneborg, ——, 3,000 bls. wood pulp.
Castle & Overton, Inc., Boschdyk, Holland, 560 bls. wood pulp.

Boston Paper Market Unchanged

BOSTON, Mass., March 5, 1928.—The situation in the paper market remains practically unchanged, with a fair volume of orders and inquiry, although operations are restricted largely to filling immediate needs of consumers. January-February held steady in about the same degree as in the corresponding period of 1927. Prices are firm.

The box board market is generally fair, with the flow of business rather steady, at least enough for the board manufacturers as a whole to run on their five days a week schedule. One firm notes that business has been rather good for the last two or three weeks, although it has been more or less of a fight for orders. Box manufacturers who have been cutting down on their inventories are getting to the point where they will want to replace exhausted supplies and it is expected that they will be in the market soon. Quotations continue the same.

Paper stock dealers report little change in the situation. The market is spotty and more or less dull. Values are unaltered in most cases, but the tendency, if anything, is downward. Foreign manila rope and strings have declined again, so that they are now quotable at 2.75, compared with 2.75 to 3.00 a week ago.

Due to the advance in the raw cotton market, distributors of polished and unpolished cotton twines are looking for a stronger situation in those commodities. In fact some mills have marked up their prices on their polished twines and it is felt that quotations of all cotton twines should be higher. In certain quarters consumers placed more business for cotton twines before the prices were increased, due, perhaps, to the rise in raw material. For the previous few months the market had been slow.

Colorado Wood Goes to Wisconsin Paper Mills

DENVER, Col., March 3, 1928.—Ten carloads of peeled and split spruce, also balsam wood have been shipped to paper mills near Milwaukee, but the names have been withheld, from the forests in the vicinity of Rico, Colorado. The idea is, that the wood is suitable for paper making and the abundance of the supply will justify the erection of a pulp mill near Rico.

Forsythe Paper Co. To Act As Agent

FRANKLIN, Ohio, March 5, 1928.—The Miami Valley Coated Paper Company announces to the trade that arrangements have been completed with the Forsythe Paper Company, 10 S. La Salle street, to act as mill agents, with the jobbing trade in Chicago, on their complete line of coated papers.

Paper Mill Unions Confer at Albany

ALBANY, N. Y., February 27, 1928.—The conference of representatives of unions associated with the paper making industry which was tentatively scheduled to be held in March will convene in this city tomorrow, according to notices sent out during the past week by William R. Smith, president of the International Brotherhood of Papermakers. The conference will be held at the Brotherhood headquarters and will, it is expected, consume about two days.

The action of the representatives at this meeting will determine much that will take place during April and May in wage and working agreements entered into with papermaking companies in the United States and Canada. The meeting is being held several weeks earlier than originally anticipated.

Wage and working agreements with some paper companies carry a continuation clause but many agreements do not contain such a clause and are necessarily renewed each year. In case certain adjustments are sought with either class in the matter of wages or working conditions the local unions will be given a voice in the matter. For instance ifthere is some group of mills in Northern New York where adjustments are believed advisable by the Albany conference the matter will be submitted to local unions in mill towns where the company's plants are located and these locals will act on the matter and then advise the headquarters as to their decision.

wage agreements with certain mills are to be requested.

The conference opening here tomorrow is regarded as of unusual importance and it is understood that a number of changes in

Hudson Trading Co. Gets Award

WASHINGTON, D. C., March 7, 1928.—The Hudson Trading Company has been awarded the contract for furnishing the Government Printing Office with 2,500,000 pounds of standard newsprint paper 24, 36 and 48 inches wide at 3.29 cents per pound, bids for which were received on Febuary 24.

This is the amount for which bids were asked for the annual supply of news print for the Government Printing Office; all of the bids being rejected by the Joint Congressional Committee on Printing. The Hudson Company was low bidder at that time but the committee understood that the paper was to be furnished from outside the United States. The award which has just been made is the result of bids received on the open market on which the Hudson Company was against the low bidder.

The

ST. REGIS PAPER COMPANY

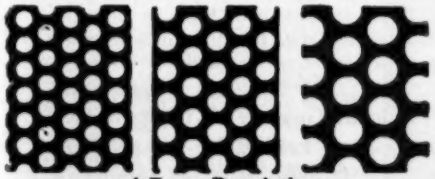
Daily Capacity
525 TONS

Newsprint
Catalog and Directory Papers
Fibre Wrapping Papers
Packers Oiled Manila
Specialties

General Sales Office
49 Wall St., New York

Farmers' Bank Bldg.
Pittsburgh, Pa.

PERFORATED METALS



of Every Description
For Pulp and Paper Mills
THE HARRINGTON & KING PERFORATING CO.
5652 Fillmore St., Chicago, Ill.
NEW YORK OFFICE: 114 Liberty St.

INTERNATIONAL ACCEPTANCE BANK
INCORPORATED

International
Banking Transactions

Commercial Letters of Credit
Collections Foreign Exchange
Investment Securities
Bullion and Currency

PAUL M. WARBURG, *Chairman* F. ABBOT GOODHUE, *President*

52 Cedar Street, New York

Sulphur

A FIRST REQUISITE

IN

Paper Making

Large Production
Ample Reserves
Prompt Deliveries
Purity 99½%

TEXAS GULF SULPHUR CO.
41 E. 42nd Street New York City
Mine Gulf, Matagorda County, Texas

New York Market Review

Office of THE PAPER TRADE JOURNAL,
Wednesday, March 7, 1928.

Trading in the local paper market during the past week was about normal for the time of the year and the demand for the various grades was fairly satisfactory. According to reliable reports, the sales forces of the leading paper organizations are enjoying a busy Spring campaign and further expansion of business is looked for until the end of the Easter season. Prices are holding up very well and there is little talk of concessions at present.

News print continues in steady demand and consumption is apparently sufficiently heavy to absorb the large production which is being maintained, both in the United States and Canada. Moderately active conditions continue to prevail in the spot market. Prices are generally being maintained at the recently quoted levels.

The various grades of paper board are moving in good volume. Box board is still in excellent request. Prices remain steady and unchanged. The position of the fine paper market continues to improve and tissues are also arousing more interest. The tone of the coarse paper market is strong while wrapping paper is becoming exceptionally active.

Cechanical Pulp

Supplies of both imported and domestic ground wood appear to be sufficiently large to take care of current demands. The fact that the production of foreign mechanical pulp is still restricted has a steadying influence on the situation. Prices of both the imported and domestic product remain practically unchanged from previously reported quotations.

Mechanical Pulp

The undertone of the chemical pulp market is very firm, due mainly to reports from Sweden. As a result of the workers failing to approve the second wood pulp referendum, the paper mills declared a lockout, effective March 5. It is reported that this move, together with previous strikes and lockouts affects a total of 57,000 workers and the indications are that the industrial conflict may last for some time.

Old Rope and Bagging

Some improvement was noticed during the past week in the mill demand for old rope and bagging. Both foreign and domestic old rope are exhibiting a strong tendency and prices are steadier than for some time. The bagging market is also more active and prices are holding up to former levels without difficulty.

Rags

The position of the rag market is stronger. Both imported and domestic rags are in better request than of late. Stocks in the hands of the dealers are reported to be not excessive and if the demand continues to expand to any extent higher prices may be looked for.

Waste Paper

Flat stock was again the bright particular feature of the paper stock market during the week. Demand was very lively and with supplies decidedly limited prices advanced on all the different grades. Hard white shavings and soft white shavings were somewhat easier but the other divisions of the waste paper market remain practically unchanged.

Twine

The condition of the twine market at present is very healthy, due mainly to the increased demand for wrapping paper for Spring and Easter requirements. Quotations are holding up very well for the time of the year and the outlook for the immediate future, at least, is decidedly promising.

Mill Workers Wage Agreements Discussed

ALBANY, N. Y., March 5, 1928.—Representatives of the various unions associated with the paper making industry met in conference here last Tuesday to discuss renewals of wage and working agreements. The conference was held in the headquarters of the International Brotherhood of Papermakers and lasted for two days. William R. Smith, president of the International Brotherhood of Papermakers, presided, and John P. Burke, of Fort Edward, president of the Pulp, Sulphite and Paper Mill Workers Union, acted as secretary.

Among those present were W. R. Smith, Frank P. Barry, M. H. Parker, Arthur Huggins, Joseph Addy, representing the Brotherhood; John P. Burke, of Fort Edward, Jacob Taylor, of Penobscot, Me., S. E. Larner, of Green Bay, Wis., Jacob Stephen, of Fulton, Alex Gibson, of Port Arthur, and Herbert Sullivan, of Worcester, representing the Pulp, Sulphite and Paper Mill Workers Union; President McNamara, of the Carpenters; John McEntee, of the Machinists; J. J. Dowling, and Ernest Ingalls, of London, Ont., representing the Electricians.

There are about twenty companies with which the unions have agreements carrying continuation clauses and considerable discussion was indulged in as to which, if any, of these would be open to adjustments. There are about twenty mills with agreements which expire May 1. In some instances where no changes are desired the agreements will be renewed automatically without the necessity of conferences. In certain cases companies have acquired more mills during the past year and it will be necessary to adjust wages and working conditions in these mills in accordance with others of the group.

Following a thorough discussion of the matter it was decided to hold another meeting at Albany on April 4 and during the next few weeks delegates will have an opportunity to discuss with their locals and ascertain what the sentiment is regarding any conferences with manufacturers.

B. M. Thomas Goes With Container Corporation

B. M. Thomas, who has been vice-president of the Dixon Board Mills, Inc., Carthage, Ind., has become connected with the Philadelphia branch of the Container Corp. of America as mill manager.

G. N. Collins Now With Bryant Paper Co.

Grellet N. Collins, formerly vice-president of the Dill & Collins Company, Philadelphia, is now with the Bryant Paper Company, of Kalamazoo, Mich.

SHIPPING INSURANCE

The Use of

ELIXMAN CORES

protects your rolls and insures their delivery to your customer in perfect condition. They eliminate claims for damage.

SHIPPING INSURANCE

Your two sources of supply are

Canadian Elixman Company
HAMILTON, ONTARIO

Elixman Paper Core Company
CORINTH, N. Y.

West Virginia Pulp and Paper Company

Manufacturers of

SUPERCALENDERED
and
MACHINE FINISHED BOOK
and LITHOGRAPHIC
PAPERS

Offset, Envelope, Bond, Writing, Cover and Music Paper, High Grade Coated Book, Index Bristol, Post Card, Kraft and Label Papers.

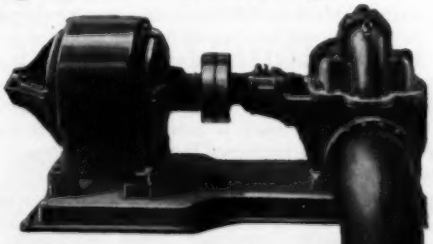
also

Bleached Spruce Sulphite and Soda, Kraft Pulp

200 Fifth Avenue, New York — 732 Sherman Street, Chicago
503 Market St., San Francisco, Cal.
122 East 7th St., Los Angeles, Cal.
Sixth and Chestnut Sts., Philadelphia, Pa.

A Rod Packing That Withstands Caustic Soda and Other Chemicals

Style "C" Packing



is made to resist the destroying element of caustic soda and similar chemicals.
Its lubricant can be relied upon to not only counteract the chemical destruction, but to also keep the pump rod so perfectly lubricated as to practically do away with rod friction.

We can convince you of the economy of using STYLE "C" if you will let us send you a free working sample. State size desired.

GREENE, TWEED & CO.
Sole Manufacturers
109 Duane St., New York

CAUSTIC SODA

WOODPULP AGENTS

PRICE & PIERCE, Ltd.,

17 EAST 42ND ST.,
NEW YORK

Miscellaneous Markets

Office of THE PAPER TRADE JOURNAL,
Wednesday, March 7, 1928.

Conditions in the local chemical market during the past week were fairly satisfactory. Most of the grades used in the paper mills were in good demand and contract withdrawals continued to move at a steady pace. Prices were practically unchanged and reports of concessions were infrequent.

BLANC FIXE.—The position of the blanc fixe market is sound. Both the pulp and the powder are in normal demand for the time of the year. Prices are holding up to recently reported levels. The pulp is offered at $60 per ton, in bulk, and the powder is quoted at from 4 cents to 4½ cents per pound, in barrels, at works.

BLEACHING POWDER.—Demand for bleaching powder is persistent. Supplies are moving into consumption in satisfactory volume. Inquiries for future business are numerous. Prices remain unaltered. Bleaching powder is quoted at from $2 to $2.35 per 100 pounds, in large drums, at works, according to quantity.

CASEIN.—Trading in the casein market was rather light during the past week. A revival of activity, however, is anticipated in the near future. Imported casein is selling at from 17½ cents to 18 cents a pound and domestic casein is quoted at from 16½ cents to 18 cents a pound, all in bags, car lot quantities.

CAUSTIC SODA.—Deliveries of caustic soda are going forward at a rate which compares favorably with the preceding year's record. No changes in quotations have been made by the manufacturers recently. Solid caustic soda is quoted at from $2.90 to $2.95 per 100 pounds. The flake and the ground are offered at from $3.30 to $3.35 per 100 pounds, in large drums, at works.

CHINA CLAY.—The china clay market was moderately active during the past week. Prices are holding up to schedule, in most instances. Imported china clay is selling at from $15 to $25 a ton, in bulk, ship side. Domestic paper makers clay is quoted at from $8 to $9 a ton, at mine, and pulverized at from $10 to $12 a ton.

CHLORINE.—Some improvement was noticed in the demand for chlorine. Production is proceeding along normal lines and the output is being readily absorbed. Prices remain unaltered. Chlorine is quoted at 3½ cents a pound, in tanks, or multi-unit cars, at works, on contract orders. The spot quotation ranges from 3¾ cents to 4 cents a pound.

ROSIN.—The rosin market is exhibiting a firmer undertone. Supplies are moving into consumption at a steady pace. At the naval stores, the grades of gum rosin used in the paper mills are now selling at from $9.75 to $10.05 per 280 pounds, ex dock, in barrels. Wood rosin is still offered at from $7 to $7.80 per 280 pounds, southern shipping points.

SALT CAKE.—Manufacturers of salt cake are reported to be well sold ahead and the demand for this product since the beginning of the year has been very encouraging. Prices are steady and unchanged. Salt Cake is quoted at from $18 to $19 a ton, in bulk, at works. Chrome salt cake is selling at from $14 to $15 a ton, in bulk, at works.

SODA ASH.—Supplies of soda ash continue to move into consumption in heavy volume. Inquiries for future requirements are fairly numerous. Prices are holding up to schedule. Contract prices on soda ash, in car lots, at works, rule as follows: in bags, $1.32½, and in barrels, $1.55.

STARCH.—The starch market continues to exhibit a strong tendency. Stocks are not excessive but are said to be sufficient to cover immediate requirements. The recently advanced prices are being well maintained. The quotation on paper maker's starch is now $3.57 per 100 pounds, in bags, and $3.74 per 100 pounds, in barrels.

SULPHATE OF ALUMINA.—Contract withdrawals of sulphate of alumina were satisfactory during the past week. Demand for this product is about normal for the time of the year. Prices remain unchanged. Commercial grades of sulphate of alumina are selling at from $1.40 to $1.45 per 100 pounds, in bags, at works. The iron free is quoted at from $2 to $2.05 per 100 pounds, in bags, at works.

SULPHUR.—Production of sulphur is being maintained in sufficient volume to cope with current needs. Supplies are moving into consumption in a satisfactory manner. Quotations remain steady and unchanged. Sulphur is still selling at from $18 to $19 a ton, in bulk, at mine, according to quantity. The spot quotation is $20 a ton.

TALC.—Manufacturers of talc have made no price changes of late and the schedule is being maintained without difficulty, in most instances. Contract withdrawals are normal and the future outlook is encouraging. Domestic talc is still selling at from $16 to $18 a ton, at eastern mines, while French talc is quoted at from $18 to $22 a ton, in bags, ship side.

Anti-Injunction Bill Explained

GLENS FALLS, N. Y., March 5, 1928.—Explanation of the anti-injunction bill now before Congress and the New York Legislature was given at a meeting here recently by John P. Burke, of Fort Edward, president of the Pulp, Sulphite and Paper Mill Workers International Union. Mr. Burke was in attendance at the recent hearings on the bill in Washington.

Explaining the working of the present law Mr. Burke cited his own experience in the strike of 1920.

A judge who had issued an injunction cited him for contempt, he said, because he addressed a meeting at Ticonderoga. The motion was returnable before another justice, he said, the term of the first having expired a few days after the order was made. He then said that the second justice dismissed the case holding that the president was within his rights in addressing a meeting of his own organization.

The proposed law which would permit the granting of injunctions in industrial disputes only after a hearing and would grant a jury trial to those accused of violating such injunctions amends the Civil Practice Act and the Judiciary Law and reads as follows:

"The civil practice act is hereby amended by inserting therein a new section to follow section 881 to be known as section 881-A and reading as follows:

"Injunction in industrial disputes. No restraining order of injunction by either party to an industrial dispute shall be made by any court of this state otherwise than upon notice and after hearing; such notice and hearing shall be as provided in the civil practice act for the notice and hearing of motions.

"Section 753 of Chapter 35 of the laws of 1909 entitled, 'An act in relation to the administration of Justice constituting Chapter 30 of the consolidated laws' is hereby amended by inserting therein a new subdivision, to follow subdivision 8 thereof which will be known as subdivision 9 and read as follows:

"Notwithstanding any other provision of law no person shall be punished either by fine or imprisonment for any alleged contempt arising out of any alleged failure or refusal to obey any mandate of the court contained in or incidental to an injunction made by said court in any industrial dispute, except after a trial by jury to which the defendant shall be entitled as a matter of right."

Edward Bogue Retires

MONTREAL, Que., March 5, 1928.—Edward Bogue has retired as director and sales manager of McFarlane Son & Hodgson Ltd, wholesale stationers and paper dealers. "His resignation," says Mr. McFarlane, president of the company, "brings to a close a happy association of over twenty-six years, during which time he has contributed most successfully to the building up of our business and the establishing of the existing very pleasant relations between our friends and this company. He takes with him our very best wishes for his health and happiness in his well earned leisure."

Mr. Bogue's duties and positions will be assumed by Edgar T. Reynolds.

For reliable running and average long life

LINDSAY FOURDRINIER WIRES

are unsurpassed

We make them for the largest and fastest machines.

Cylinder Wires All Sizes

The Lindsay Wire Weaving Co.

Collinwood Sta. CLEVELAND, OHIO

PQ

How to meet the specifications at a saving

If you secured the recent government awards, for any of these grades, you must meet the specifications.

Cover Paper	Mimeograph
Manila	Kraft
Tag	Book
Binders Board	Railroad
Post Card	Bristol
Chip Board	Boxboard
Index	Pressboard

Strawboard

You can do so easily at a saving to yourself. "A-Syrup" silicate in the beater is the means. Get in touch with us for the full particulars.

Philadelphia Quartz Co.

SILICATE HEADQUARTERS
PHILADELPHIA

Prompt deliveries made from stocks in
NEW YORK
BOSTON
PHILADELPHIA
CHICAGO

TRADE U MARK

Hundreds of years!

The number of years we have served each of our customers, if added together, would run into the centuries. These customer-years mean just one thing—Heller & Merz quality is satisfactory.

The HELLER & MERZ COMPANY
505 Hudson St., New York

Boston 287 Atlantic Ave. | Chicago 146 W. Kinzie St. | Philadelphia 114 Market St.

Springfield, Mass. 24 Lester Street

Factory—NEWARK, N. J.

Clay

300 tons daily

AMERICAN MADE FOR AMERICAN TRADE

AT LAST!!

"An American Coating Clay"

H. T. Brand Coating Clay, Highest Grade Filling Clay, being used in some of the largest paper mills in the country. Send for samples and article on "*An American Coating Clay*." Forty-three years experience in American washed clays are back of this product.

Let us submit sample and quote you.

THE

EDGAR BROS. CO.

50 Church St.,
NEW YORK

Market Quotations

Quoted by Hepburn & Co., 74 Broadway, N. Y. City, to whom all inquiry for quotations on these or any other Securities is referred.

BONDS	BID	OFFERED
A. P. W. Pulp & Power, 7s 1945	101	102
American Writing Paper, 6s 1947	80	82
Bastrap Pulp & Paper, 6½s 1940	100	103
British Columbia Pulp & Paper, 6s 1950	85	90*
Beaver Products Corp., 7½s 1942	106	109
Bedford Pulp & Paper, 6½s 1942	98½	None
Brown Paper Co., 1st 5½s 1946	96½	99
Bryant Paper Co., 6s 1942	100½	102
Cape Breton Pulp & Paper, 6s 1932	101	103
Central Paper, 7s 1933	85	None
Central Paper Serial 6, 6½s 1942	89	...
Champion Coated Paper, 6s 1926 to 1932	99	...
Champion Fibre, 8s 1930	100	...
Champion Paper Corp'n, 1st 6s 1945	95	97
Continental Paper Products, 6½s 1943	88	91½
Cornell Wood Prod., 7½s 1937	100	104*
Crown Willamette Paper, 6s 1951	100	102
Donnaconna Paper, 6s 1940	101	102½
Dells Paper & Pulp Serial, 6s 1926-38	*95	...
Eastern Mfg. Co., 7s 1938	89	91
Eddy Paper, 7½s 1931	101	103
Escanaba Paper Serial, 6s 1928	99¾	...
Filer Fibre Serial, 7s 1926-39	95	...
Fort Orange Paper, 7s 1942	99	102
Fox River Paper, 7s 1931	99	...
Gair Company, 5½s 1942	96	99
Gilbert Paper Co., 6½s 1926-29	91	None
Hammermill Paper, 6s 1939	100	103*
Hoberg Paper & Fibre, 7s 1937	94½	96
Itaska Paper & Prairie River Power, J+5½s 1926-38	99	101
Itaska Paper, 1st 6s 1933-38	99	101
Kalamazoo Veg. Parchment, 6s 1938	98	...
Marinette & Menominee, 7½s 1936	100	103
Menasha Printing & Carton, 6½s 1939	99½	...
Monroe Paper Products, 7½s 1932	96	...
Munising Paper, 6s 1927-36	96	100
Nekoosa Edwards, 1st Ref. 6s 1928 to 1942	96	99*
Orono Pulp & Paper, 6s 1943	98	...
Orono Pulp & Paper, 5s 1941	94	...
Oswego Falls Corp., 6s 1941	98	100*
Oxford Paper, 6s 1947	104	...
Paepcke Paper Mills, 7s 1930	99	None
Parsons Pulp & Lumber, 7s 1928	97	...
Parker Young Co., 6½s 1944	96½	98½
Paterson Parchment Paper, 6s 1938	100½	102
Penobscot Chemical Fibre, 6s 1942	98	...
Queens City Paper, 7s 1932	95	100*
Richardson Co., 6s 1938	100	...
River Raisin Paper, 6s 1936	96	...
Spanish River Pulp & Paper, 8s 1941	108	110
Stevens & Thompson Paper, 6s 1942	93	95
St. Anne Paper, 6½s 1946	99	101
St. Croix Paper, 5s 1936-37	95	98*
St. Regis Paper Serial, 6½s 1926-35	99½	101
Tait Paper & Color Industries, 6s 1934	90	95
Taggart Bros. Co., 6s 1944	95	97
Ticonderoga Pulp & Paper, 5s 1930	94	98
Ticonderoga Pulp & Paper, 6s 1940	99	101
Warren (The S. D.) Company, 6s 1945	99	101
Wotab Paper, 6½s 1943	102	...
Westfield River Paper, 7s 1926-43	91	...
Whitaker Paper, 7s 1942	106	108

STOCKS	BID	ASKED
American Box Board, Pfd.	8	10
American Box Board, Com.	8	10
Am. Tissue Mills, 7% Pfd.	90	93
British Columbia P. & P., Pfd.	54	58
Brompton Pulp & Paper, 8% Pfd.	100	102
Brown Corpn., 7% Pfd.	100	104
Champion Fibre, 7% Pfd.	106	112
Diem & Wing, 7% Cum. Pfd.	90	...
Eastern Mfg. Co., 1st Pfd.	28	33
Great Northern Paper, Com.	70	75
Hammermill Paper, 7% Pfd.	105	110
Hinde & Dauch, Com.	135	...
Hinde & Dauch, Pfd.	100	...
Holyoke Card & Paper	160	None
Marathon Paper Mills, Com.	125	...
Midwest Box Co., Pfd. 8%	94	98
Midwest Box Co., Pfd. 6%	92	97
Louis De Jonge Co., 7% Pfd.	93	96
Oxford Papers, Com.	160	170
Oxford Paper Co., Pfd.	105	108
Penobscot Chemical Fibre, Com.	65	75*
Richardson, 7% Pfd.	160	...
Rubberoid	74	77
Seaman Container, Class B (par $1)	1	None Off.
Seaman Paper Co.	Wanted	None Off.
St. Croix Paper	150	170
St. Regis Paper Co., 7% Cum. Pfd.	101½	104½
Westfield River Paper Co., 1st Pfd.	Wanted	None Off.
West Virginia Pulp and Paper Com.	50	55
West Virginia Pulp & Paper, Pfd.	101	103
Whittaker Paper, 7% Cum. Pfd.	98	103

* Nominal.

Paper

(F. o. b. Mill)

Ledgers	11.00	@38.00
Bonds	9.00	@45.00
Writings—		
Extra Superfine	14.00	@32.00
Superfine	14.00	@32.00
Tub sized	10.00	@15.00
Engine Sized	8.00	@11.00
News—		
Rolls, contract	3.25	@ —
Rolls, transient	3.25	@ 3.50
Sheets	3.65	@ 3.85
Side Runs	3.00	@ 3.75
Book, Cased—		
S. & S. C.	6.35	@ 7.75
M. F.	6.25	@ 7.75
Coated and Enamel	8.00	@15.00
Lithograph	8.00	@15.00
Tissues—Per Ream—		
White No. 1	.75	@ 1.00
Anti-Tarnish	1.10	@ 1.90
Colored	1.00	@ 2.00
White No. 2	.75	@ .85
Kraft	.90	@ 1.00
Manila	.75	@ .85
Kraft—		
No. 1 Domestic	6.25	@ 6.50
No. 2 Domestic	4.50	@ 4.75
Southern	4.25	@ 4.50
Imported	6.50	@ 7.00
Manila—		
No. 1 Jute	9.00	@ 9.25
No. 2 Jute	7.75	@ 8.50
No. 1 Wood	4.75	@ 5.25
No. 2 Wood	4.00	@ 4.50
Butchers	3.75	@ 4.25
Fibre Papers—		
No. 1 Fibre	5.00	@ 5.50
No. 2 Fibre	4.75	@ 5.25
Common Bogus	2.75	@ 3.00
Screenings	3.00	@ 3.25
Card Middles	4.00	@ 5.00
Glassine—		
Bleached, basis 25 lbs.	13.00	@16.00
Bleached, basis 20 lbs.	15.00	@16.00

(Delivered New York)

Boards—per ton—		
News	45.00	@47.50
Straw	57.50	@60.00
Chip	42.50	@45.00
Binders' Boards	70.00	@75.00
Sgl. Mla. Ll. Chip.	57.50	@60.00
Wood Pulp	80.00	@85.00
Container	67.50	@72.50

Mechanical Pulp

(Ex-Dock)

No. 1 Imported—		
Moist	28.00	@30.00
Dry	32.00	@34.00

(F. o. b. Mill)

No. 1 Domestic	26.00	@29.00
Screenings	15.00	@20.00

Chemical Pulp

(Ex-Dock, Atlantic Ports)

Sulphite (Imported)—		
Bleached	3.40	@ 4.25
Easy Bleaching	2.65	@ 2.90
No. 1 strong unbleached	2.50	@ 2.65
Mitscherlich unbleached	2.60	@ 3.25
No. 2 strong unbleached	2.30	@ 2.40
No. 1 Kraft	2.55	@ 2.75
No. 2 Kraft	2.40	@ 2.50
Sulphate—		
Bleached	3.65	@ 3.85

(F. o. b. Pulp Mill)

Sulphite (Domestic)—		
Bleached	3.30	@ 4.75
Easy Bleaching Sulphite	2.60	@ 2.75
News Sulphite	2.40	@ 2.65
Mitscherlich	3.00	@ 3.70
Kraft (Domestic)	2.60	@ 3.30
Soda Bleached	3.25	@ 3.50
Sulphate Screenings—		
Coarse	.75	@ .85
Refined	1.50	@ 1.85

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—		
New White, No. 1	11.75	@12.25
New White, No. 2	8.00	@ 8.50
Silesias No. 1	7.25	@ 7.75
New Unbleached	10.50	@11.00
Washables	4.25	@ 4.75
Fancy	5.50	@ 6.00
Blue Overall	6.75	@ 7.25
New Blue Prints	5.25	@ 5.50
New Soft Blacks	5.25	@ 5.75
Mixed Khaki Cuttings	4.75	@ 5.25
Pink Corset Cuttings	8.00	@ 8.50
O. D. Khaki Cuttings	5.25	@ 5.75
Men's Corduroy	3.75	@ 4.25
New Mixed Blacks	3.50	@ 3.75

Old Rags

White, No. 1—		
Repacked	5.50	@ 6.00
Miscellaneous	4.50	@ 5.00
White, No. 2—		
Repacked	3.00	@ 3.50
Miscellaneous	2.50	@ 2.75
St. Soiled, White	2.00	@ 2.15
Thirds and Blues—		
Repacked	2.25	@ 2.50
Miscellaneous	1.75	@ 2.00
Black Stockings	3.25	@ 3.75
Roofing Rags—		
Cloth Strippings	1.70	@ 1.80
No. 1	1.70	@ 1.80
No. 2	1.50	@ 1.60
No. 3	1.30	@ 1.40
No. 4	1.25	@ 1.35
No. 5A	.95	@ 1.05

Foreign Rags

New Light Silesias	7.00	@ 7.50
Light Flannelettes	7.50	@ 8.00
Unbleached Cottons	10.00	@11.00
New White Cuttings	10.50	@11.50
New Light Oxfords	7.00	@ 7.50
New Light Prints	5.50	@ 6.50
New Mixed Cuttings	3.00	@ 3.50
New Dark Cuttings	2.75	@ 3.25
No. 1 White Linens	7.25	@ 8.00
No. 2 White Linens	5.50	@ 6.25
No. 3 White Linens	4.50	@ 5.00
No. 4 White Linens	3.00	@ 3.50
Old Extra Light Prints	2.75	@ 3.25
Ord. Light Prints	2.25	@ 2.50
Med. Light Prints	1.90	@ 2.10
Dutch Blue Cottons	2.25	@ 2.50
German Blue Linens	2.50	@ 2.75
German Blue Cottons	2.00	@ 2.25
Checks and Blues	1.75	@ 2.00
Lindsay Garments	1.85	@ 1.95
Dark Cottons	1.60	@ 1.65
Shoppery	1.55	@ 1.60
French Blues	2.25	@ 2.50

Old Rope and Bagging

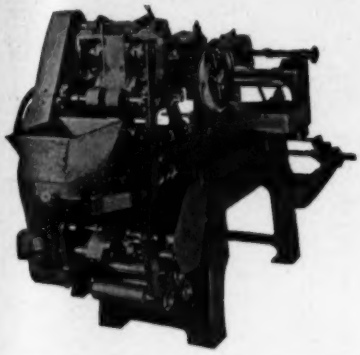
(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—		
Foreign	1.65	@ 1.75
Domestic	1.70	@ 1.75
Wool Tares, light	1.60	@ 1.65
Wool Tares, heavy	1.60	@ 1.65
Bright Bagging	1.60	@ 1.65
Small Mixed Rope	1.25	@ 1.40
Manila Rope—		
Foreign	3.00	@ 3.10
Domestic	3.75	@ 4.00
New Burlap Cut	2.75	@ 3.00
Hessian Jute Threads—		
Foreign	3.50	@ 4.00
Domestic	3.25	@ 3.50

Old Waste Papers

(F. o. b. New York)

Shavings—		
Hard, White, No. 1	3.25	@ 3.50
Hard, White, No. 2	2.75	@ 3.00
Soft, White, No. 1	2.60	@ 2.85
Flat Stock—		
Stitchless	1.75	@ 1.85
Overissue Mag.	1.70	@ 1.80
Solid Flat Book	1.65	@ 1.75
Crumpled No. 1	1.25	@ 1.35
Solid Book Ledger	2.00	@ 2.10
Ledger Stock	1.70	@ 1.80
New B. B. Chips	.65	@ .75
Manilas—		
New Env. Cut	2.40	@ 2.60
New Cuttings	1.60	@ 1.85
Extra No. 1 old	1.25	@ 1.35
Print	.85	@ .95
Container	.70	@ .80
Bogus Wrapper	.75	@ .85
Old Kraft Machine Compressed bales	1.95	@ 2.05
News—		
No. 1 White News	1.70	@ 1.80
Strictly Overissue	.80	@ .90
Strictly Folded	.55	@ .60
No. 1 Mixed Paper	.45	@ .50
Common paper	.30	@ .35

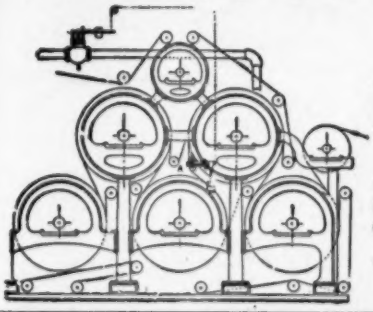


HIGHEST SPEED
Paper Bag Machinery

Get My Quotations Before Placing Your Orders
Special Machinery Designed and Built

A. L. PARRISH,
1702 Robinson St., South Bend, Ind.

The Pickles Drying Regulator **WE ARE SAFE IN OUR PROPOSITION**
YOU'LL MAKE NO MISTAKE IN ACCEPTING IT



Pickles Drying Regulator

will do everything we claim for it and more. The test costs you nothing until you are satisfied. Many mills tried one and now have every machine equipped. Write for list of users and other information.

W. F. PICKLES **Buckland, Conn.**

Cotton and Paper Rolls
Super Calenders
Friction Calenders
Embossing Calenders
Hydraulic Presses and Pumps

Successors to the Granger Foundry & Machine Co.

The Textile-Finishing Machinery Company
PROVIDENCE, R. I.

TYPE "B" IRON EXTRACTOR

It consists of special magnetic surfaces of great power over which the paper stuff is made to pass. As a result, all the iron and many other foreign substances are completely extracted. Hundreds of these devices are in use daily and no one of them has failed to give complete satisfaction. Write us for Bulletins and full data.

THE ROLAND T. OAKES CO., Holyoke, Mass.

Electrical Specialists. ***Established 1885***

for **PAPER MAKING**

Twines

(F. o. b. Mill)

Cotton—			
No. 1	.39	@	.40
No. 2	.37	@	.38
No. 3	.36	@	.37
B. C., 18 basis	.38	@	.40
A. E. Italian, 18 basis	.48	@	.53
Finished Jute—			
Dark 18 basis	.24	@	.25
Light 18 basis	.27	@	.28
Jute Wrapping, 3-6 Ply—			
No. 1	.21	@	.23
No. 2	.20	@	.22
Tube Rope—			
4-ply and larger	.18	@	.19
Fine Tube Yarn—			
5-ply and larger	.23	@	.27
4-ply	.24	@	.28
3-ply	.26	@	.30
Unfinished India—			
Basis	.16	@	.17
Paper Makers Twine			
Balls	.13	@	.15
Box Twine, 2-3 ply	.17	@	.19
Jute Rope	.21	@	.23
Ameri. Hemp, 6	.29	@	.31
Sisal Hay Rope—			
No. 1 Basis	.18	@	.20
No. 2 Basis	.16	@	.18
Sisal Lath Yarn—			
No. 1	.16	@	.18
No. 2	.14	@	.16
Manila Rope	.24	@	.26

CHICAGO

All Rag Bond	.35	@	.41
No. 1 Rag Bond	.25	@	.35
No. 2 Rag Bond	.14	@	.25
Water Marked Sulphite Bond	.09	@	.12
Sulphite Bond	.06¾	@	.11
Superfine writing	.18	@	.24
No. 1 fine writing	.14	@	.18
No. 2 fine writing	.12	@	.14
No. 3 fine writing	.08½	@	.12
No. 1 M. F. Book	.06½	@	.07¼
No. 2 M. F. Book	.05¼	@	.06¾
No. 1 S.&S.C. Book	.06¾	@	.07¾
No. 2 S.&S.C. Book	.05¾	@	.06½
Coated Book	.07½	@	.12
Coated Label	.07½	@	.10
News—Roll, mill	.03½	@	.04¼
News—Sheets, mill	.03¾	@	.04¾
No. 1 Manila	.04¼	@	.05¾
No. 1 Fibre	.04¾	@	.05¾
No. 2 Manila	.04¼	@	.04¾
Butcher's Manila	.04	@	.04½
No. 1 Kraft	.05¾	@	.06¾
Southern Kraft	.04½	@	.05
No. 2 Kraft	.05	@	.05¼
Wood Tag Boards	.04¼	@	.06¼
Sulphite Screenings	.03	@	.03¼
Manila Tissue—			
24x36 Sheet	.07	@	.07¾
White Tissue—			
20x30 Sheet	.07¼	@	.07½
Boards, per ton—			
(Delivered Central Territory)			
Plain Chip	45.00	@	—
Solid News	47.50	@	—
Manila Lined Chip	55.00	@	—
Container Lined—			
(Delivered Central Territory)			
85 Test	65.00	@	70.00
100 Test	70.00	@	—

Old Papers

(F. o. b. Chicago)

Shavings—			
No. 1 Hard White	2.80	@	2.90
White Env. Cuttings	3.60	@	3.70
No. 1 Soft Shavings	2.50	@	2.60
No. 1 Mixed	1.00	@	1.05
No. 2 Mixed	.90	@	1.00
Ledger & Writings	1.55	@	1.65
Solid Books	1.20	@	1.30
Blanks	1.70	@	1.80
Krafts	1.90	@	2.00
New Kraft Cuts	2.25	@	2.35
Manila Envelope Cuttings	2.00	@	2.10
Ex. No. 1 Manila	1.55	@	1.65
Print Manila	.90	@	1.00
Folded News (overissue)	.65	@	.75
Old Newspapers—			
No. 1	.65	@	.75
No. 2	.60	@	.65
Mixed Papers—			
No. 1	.70	@	.80
Roofing Stocks—			
(F. o. b. Chicago, net cash)			
No. 1	30.00	@	—
No. 2	28.00	@	—

PHILADELPHIA

Paper

(F. o. b. Mill)

Bonds	.07	@	.40
Ledgers	.11	@	.40
Writings—			
Superfine	.13	@	.18
Extra fine	—	@	.22
Fine	.20	@	.26½
Fine, No. 2	.16	@	.25
Fine, No. 3	.12	@	.20
Book, M. F.	.06	@	.07
Book, S. S. & C.	.06	@	.07½
Book, Coated	.11	@	.16
Coated Lithograph	.09	@	.12
Label	.09	@	.12
News	.03¾	@	.04
No. 1 Jute Manila	.08½	@	.09
Manila Sul., No. 1	.04½	@	.06
Manila, No. 2	.04	@	.04½
No. 2 Kraft	.05¼	@	.05½
No. 1 Kraft	.06	@	.06¼
Common Bogus	.02¾	@	—
Straw Board	60.00	@	65.00
News Board	47.50	@	50.00
Chip Board	42.50	@	45.00
Wood Pulp Board	4.50	@	5.00
(Carload Lots)			
Binder Boards—			
No. 1, per ton	85.00	@	90.00
No. 2, per ton	70.00	@	75.00
Carload lots	60.00	@	65.00
Tarred Felts—			
Regular	58.00	@	63.00
Slaters (per roll)	.84	@	.94
Best Tarred, 1-ply (per roll)	1.85	@	1.95
Best Tarred, 2-ply (per roll)	1.44	@	1.54
Best Tarred, 3-ply	1.93	@	2.08
No. 1 Mixed Paper	.65	@	.70

Domestic Rags (New)

(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No. 1	.11¼	@	.12
New White, No. 2	.07	@	.07½
Light Silesias	.07	@	.07½
Silesias, No. 1	.07½	@	.08
Black Silesia, soft	.05	@	.05½
New Unbleached	.10½	@	.11
Washable	.04	@	.04½
Fancy	.05½	@	.06
Cottons—according to grades—			
Blue Overall	.07½	@	.08
New Blue	—	@	.04
New Black Soft	.05½	@	.06
New Light Seconds	.03	@	.03½
Khaki Cuttings	.04½	@	.05
Corduroy	.03	@	.03¼
New Canvas	.08	@	.09½
New Black Mixed	.05	@	.05½

Bagging

(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	1.75	@	2.00
Domestic	1.75	@	2.00
Manila Rope	3.50	@	4.00
Sisal Rope	1.25	@	2.00
Mixed Rope	1.10	@	1.25
Scrap Burlaps	1.50	@	1.75
Wool Tares, heavy	3.00	@	3.50
Mixed Strings	1.25	@	1.35
No. 1, New Light Burlap	2.50	@	2.75
New Burlap Cuttings	—	@	2.50

Old Papers

(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	3.50	@	3.60
No. 2 Hard White	3.00	@	3.25
No. 1 Soft White	2.50	@	2.75
No. 2 Soft White	1.90	@	2.00
No. 1 Mixed	1.50	@	1.60
No. 2 Mixed	.90	@	1.00
Solid Ledger Stock	1.90	@	2.00
Writing Paper	1.75	@	1.85
No. 1 Books, heavy	1.30	@	1.35
No. 2 Books, light	.85	@	.90
No. 1 New Manila	2.40	@	2.50
No. 1 Old Manila	1.50	@	1.60
Print Manila	1.00	@	1.10
Container Manila	.90	@	1.00
Old Kraft	2.00	@	2.20
Common Paper	.55	@	.60
No. 1 Mixed Paper	.60	@	.75
Straw Board, Chip	.65	@	.75
Binders Board, Chip	.65	@	.75
Overissue News	.80	@	.90
Old Newspaper	.60	@	.70

Domestic Rags (Old)

White, No. 1—			
Repacked	4.50	@	5.25
Miscellaneous	3.50	@	4.00
White, No. 2—			
Repacked	.02¼	@	.02¾
Miscellaneous	.02	@	.02¼
Thirds and Blues—			
Repacked	2.50	@	2.75
Miscellaneous	1.60	@	1.75
Black Stockings	3.50	@	3.75
Roofing Stock—			
No. 1	1.75	@	1.80

BOSTON

Paper

(F. o. b. Mill)

Ledgers—			
Sulphite	.07½	@	.15
Rag content	.15	@	.30
All rag	.38	@	.52½
Bonds—			
Sulphite	.06½	@	.11¼
Rag content	.15	@	.30
All rag	.36½	@	.65
Writings	.07	@	.20
Superfines	.11	@	.31
News	.03½	@	.04
Book, Super	.06	@	.09
Book, M. F.	.05¾	@	.08¾
Book, Coated	.08½	@	.20
Coated Litho	.09	@	.12
Label	.09½	@	.15
Jute Manila No. 1	.11	@	.13
Manila, Sul. No. 1	.04¾	@	.06¾
Manila, Sul. No. 2	.03¾	@	.04½
No. 1 Kraft	.05¼	@	.06½
No. 2 Kraft	.04¼	@	.05
Common Bogus	.02¾	@	.02¾
Delivered New England points			
Straw Board, rolls .009	57.50		
Straw Board in Sheets, basis 35s to 70s	54.50	@	55.00
Filled News Board	47.50		
Chip Board	45.00		
Single Manila Pulp lined board	55.00	@	60.00
Single White, patent coated board bender	75.00	@	82.50
Wood Pulp Board	80.00	@	85.00
Binder Boards	70.00	@	75.00
(F. o. b. Mill)			
Tarred Felts—			
Regular, carload lots	65.00	@	—

Old Papers

(F. o. b. Boston)

Shavings—			
No. 1 Hard White	2.75	@	3.10
No. 2 Hard White	2.60	@	2.90
No. 1 Soft White	2.60	@	—
No. 1 Mixed	1.10	@	1.15
No. 2 Mixed	.85	@	.90
Solid Ledger Stock	2.25	@	—
No. 1 Books, Heavy	1.50	@	1.60
No. 1 Books, Light	—	@	1.15
Manila Env. Cuttings	2.00	@	2.25
No. 1 Old Manila	1.25	@	1.35
White Blank News	1.50	@	—
Old Kraft	2.10	@	—
Print Manila	.70	@	.80
No. 1 Mixed Paper	.45	@	.50
Overissue News	.70	@	.80
Old Newspapers	.50	@	.60
Box Board, Chip	.65	@	—

Bagging

(Price f. o. b. Boston)

Gunny No. 1—			
Foreign	1.40	@	1.50
Domestic	1.50	@	1.60
Manila Rope and Strings—			
Foreign	—	@	2.75
Domestic	—	@	3.50
Mixed Strings	.90	@	1.00
Scrap Burlaps	1.37½	@	1.50
Wool Tares, heavy	—	@	1.50
New Burlap Cutting	2.25	@	2.37½

Domestic Rags (New)

(Price f. o. b. Boston)

Shirt Cuttings—			
New White No. 1	.11	@	.11½
Silesias, No. 1	.07	@	.07½
New Unbleached	.09½	@	.10
Fancy	.05	@	.05½
Washable	.04	@	.04½
Cottons—According to grades			
Blue Overalls	.07	@	.07½
New Black, soft	.04	@	.04½
Khaki Cuttings	.04¼	@	.05½
Corduroy	.03	@	.03½
New Canvas	.08	@	.08½

Domestic Rags (Old)

(Price f. o. b. Boston)

Canvas	.04½	@	—
White No. 1—			
Repacked	5.50	@	5.75
Miscellaneous	5.00	@	—
White No. 2—			
Repacked	.04½	@	.05
Miscellaneous	.03½	@	.04
Thirds and Blues—			
Repacked	2.00	@	2.12½
Miscellaneous	1.75	@	1.90
Roofing Stock—			
No. 1	1.70	@	—
No. 2	1.50	@	—
No. 3	1.10	@	—
No. 4	1.10	@	—

Foreign Rags

(F. o. b. Boston)

Dark Cottons	—	@	1.55
New No. 1 Shirt Cuttings	11.00	@	11.50
Dutch Blues	2.00	@	—
Lace Curtains	5.00	@	5.25
New Checks & Blues	4.50	@	4.65
Old Fustians	1.80	@	—

TORONTO

Paper

(F. o. b. Mill)

Bond—			
No. 1 Sulphite	.12½	@	—
No. 2 Sulphite	.10¾	@	—
No. 1 Colored	.13½	@	—
No. 2 Colored	.11¾	@	—
Ledgers (sulphite)	—	@	—
Ledgers, No. 1	.36	@	—
Ledgers, No. 2	.27	@	—
Writing	.09½	@	.10
News f. o. b. Mills—			
Rolls (carloads)	3.25	@	—
Sheets (carloads)	3.75	@	—
Sheets (2 tons or over)	4.00	@	—
Book—			
No. 1 M. F. (carloads)	7.75	@	—
No. 2 M. F. (carloads)	7.50	@	—
No. 3 M. F. (carloads)	7.25	@	—
No. 1 S. C. (carloads)	8.25	@	—
No. 2 S. C. (carloads)	8.00	@	—
No. 3 S. C. (carloads)	7.75	@	—
No. 1 Coated and Litho	14.50	@	—
No. 2 Coated and Litho	13.50	@	—
No. 3 Coated and Litho	12.75	@	—
Coated tinted	.15	@	—
Wrapping—			
Rag Brown	4.85	@	—
White Rag	5.25	@	—
"B" Manila	5.65	@	—
No. 1 Manila	6.65	@	—
Fiber	6.65	@	—
Kraft, M. F.	7.20	@	—
M. G.	7.35	@	—

Pulp

(F. o. b. Mill)

Ground wood	31.00	@	—
Sulphite easy bleaching	62.50	@	—
Sulphite news grade	55.00	@	58.00
Sulphite, bleached	76.00	@	—
Sulphate	65.00	@	—

Old Waste Paper

(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	3.00	@	—
Soft White Book Shavings	3.00	@	—
White Blk, News	1.50	@	—
Book and Ledger—			
Flat Magazine and Book Stock (old)	1.25	@	—
Light and Crumpled Book Stock	1.10	@	—
Ledgers and Writings	1.50	@	—
Solid Ledgers	1.50	@	—
Manilas—			
New Manila Cut	1.50	@	—
Printed Manilas	1.00	@	—
Kraft	2.25	@	—
News and Scrap—			
Strictly Overissue	.80	@	—
Strictly Folded	.80	@	—
No. 1 Mixed Paper	.60	@	—

Domestic Rags

(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.12	@	.12¼
Fancy Shirt Cuttings	.06	@	.06¼